INDIA RUBBER WORLD

CAOUTCHOUC GUTTA-PERCHA

Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 45. OCTOBER 1, 1911. No. 1

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, $3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

COPYRIGHT, 1911, *BY THE INDIA RUBBER PUBLISHING CO.*

Entered at New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE OF READING.

BRAZILIAN PLANS.

FOLLOWING up the legislation of the state of Pará the next step has been an effort to secure the co-operation of the Federal Government in the remedial policy specified in the August, 1911, issue of THE INDIA RUBBER WORLD (page 396). This legislation provided for the issue of a foreign loan equalling $30,000,000 upon joint state and federal responsibility; the interest being covered by a tax on rubber exports, representing about 6 cents per pound. Loans on land and produce would be made through a bank to be established at Pará. It is, of course, an open question whether a country with the resources of Brazil needs to borrow a large sum of money to tide over present difficulties in one of the leading national industries. The solution of that question lies to a great extent in the removal of the obstacles to cheap production, to which reference is made in the German opinion quoted in another column. Brazil must evidently grow rubber cheaply in order to compete in the world's markets and it is therefore to this branch of the subject that the earnest attention of Brazilian economists and legislators will be directed in the near future.

The past month has witnessed various interesting new developments in the rubber crisis. As told in another column, the congress of state and commercial delegates lately held at Rio de Janeiro at the invitation of the Minister of Agriculture, passed at its closing session a resolution cordially approving the government proposals for dealing with the rubber crisis, on the basis of reducing cost of production, and stimulating consumption by reductions in the export duties.

From cable advices it would seem that there has since been another meeting (about September 15), when the Government was asked to take action for advancing the price of rubber. According to reports, it was contemplated to stop rubber exports from Pará next year by placing a prohibitive export duty of double the present rate on the product raised in Pará and Manáos. This measure, it is understood, would be applied if the price did not reach the equivalent of $1.80 to $1.92. The valorization plan would likewise be probably put in operation.

WHAT HIGHER RUBBER MEANS.

AT no time in the history of the rubber trade could rubber manufacturers view a fifty per cent. export duty on Brazilian rubber, and a restriction of the Acre product with greater calmness. Factory stocks have accumulated, reclaimed rubber is understood and manufactured on a greatly increased scale here and abroad, plastics, such as mineral rubber, are utilized the world over, and plantation receipts are constantly growing.

If Brazil does as she plans, as she certainly has every right to do, rubber will undoubtedly be higher for a time. The result, however, will be a tremendous increase in planting, a further exploitation of the lesser rubber producers, the substitution of many plastics for rubber wherever it is possible, and the final disappearance from the market of all wild rubber, the cost of collection of which is above 50 cents a pound.

MALAYA FIVE YEARS FROM NOW.

DR. H. N. RIDLEY, the well-known director of the Botanic Gardens, Straits Settlements, in his report covering the past year, makes the following ex-

ceedingly cheerful prediction regarding the production of rubber in the Malay Peninsula. "In 1916 the output for Malaya should be at least 65,000 tons on the present acreage alone—provided nothing unforeseen arises to cause the abandonment of already planted land."

The Malayan product for 1910 was 12,563,220 pounds. If, according to the director's prediction, this product in 1916 equals 130,000,000 pounds, the increase for these five years will be approximately 117,500,000 pounds. The acreage planted to rubber in the Malay peninsula at the end of 1910 was 362,853 acres, or about one-third of the planted area of the world. Suppose the territory outside Malaya does as well as the Malay district, the total increase of plantation rubber in 1916 would be in the neighborhood of 352,500,000 pounds, which is over twice the world's present supply. In other words, assuming that the output of wild rubber remains stationary, the total rubber production in five years will be over three times the present supply.

That is such a stupendous increase that one cannot help feeling that the figures may have some flaw, but further conputation proves them thoroughly sane. Allowing 100 trees to the acre, there were at the end of 1910 in the Malay peninsula 36,285,300 trees. In 1916 these trees will range from six to fifteen years of age, and a production of 130,000,000 pounds is only 3⅗ pounds per tree, which certainly is conservative.

The situation is fairly clear, therefore. If the wild supply suffers no diminution and if, to quote Dr. Ridley again, "nothing unforeseen arises to cause the abandonment of the already planted land," 1916 should see the rubber industry safely past any possible famine stage. But, of course, considerable weight will have to be attached to both those "ifs," especially the last.

THE WASHING OF WILD RUBBER.

THE average man, of middle life, experienced in the unfulfilled promises of many business ventures, with past disappointments and losses in mind, is usually antagonistic to new ventures. The record of the past is his guide. The thought that the future has new methods, revolutionary changes and uncharted by-paths is repugnant. Hence he condemns the new, unless it keeps step with his own practice. That is why but a short six years ago the head of a great rubber corporation gravely informed a listening audience that rubber planting in the Middle East was only an experiment carried on by the British Government and that it could by no possibility amount to anything. He believed what he said, not only because his experience taught him that such ventures were risky, but because of his unconscious repugnance to a change of conditions.

Rubber plainting wins out however and the repugnance vanishes. Moreover, the former mental attitude toward it is forgotten. Now, there is no harm in the attitude, for that is a part of conservatism. The harm is in the forgetting, for the same type of mistakes will be certain when the next problem arises.

All of this leads up to the consideration of something new in rubber, and something that is being very generally condemned. That is the washing of crude rubber in the countries where it is gathered. Of the many arguments adduced against it two are worth considering. The first is the statement that rubber manufacturers already equipped with washing apparatus prefer to do their own cleansing, because they know exactly what they get when the native gathered gum arrives. The only trouble with that statement is that it is not a fact. Their shrinkages, claims and damaged goods testify to the contrary. The second objection is that washed rubber will be classed as a manufactured product and subjected to import duties. So far there is no evidence of any attempt at such a ruling. Crude rubber deprived of its moisture is still crude rubber. It is unmanufactured until it is worked up into rubber goods. Washed or unwashed, it must go to the rubber mills for compounding, cutting, making up, finishing and packing before it is ready for the market. The intent of the law is very clear and there is little likelihood that cleaner or dryer crude rubber will ever be assessed as a manufactured product.

On the other hand, the rubber manufacturers have found no difficulty in using the clean, dry plantation sheet or block. There has arisen no case of adulteration on the part of the producer and it comes in free of duty. Moreover, its appearance upon the market in quantity has opened the eyes of the wild rubber gatherers to the importance of a clean product. The day will come when from Brazil, from the Congo, from the Gold Coast will come clean, nearly dry rubber, because it will be more merchantable and more profitable. The standardization of crude rubber should begin at its sources. To further this work, it is only necessary for the State of Pará, for example, to put a small additional tax upon dirty rubber and it will soon all be clean. Then, if they put an added

tax upon wet rubber, it would soon come into port partly dry. Such a plan worked in the Philippines, and if there why not everywhere?

"CASTILLOA" COMING INTO ITS OWN.

GIERLINGS' method for extracting the latex of the *Castilloa* which has been adopted by planters in Java, appears to be a distinct advance over those in general use. Half a pound from 8 and 9 year old trees, with a cost of, say, 25 cents and a market price for the product of at least $1 should encourage all *Castilloa* growers.

SECRETS IN RUBBER MANUFACTURE.

IT is often remarked that today there are no secrets in rubber manufacture. The policy of the open door that the greatest and most progressive factories have long pursued, the constant interchange of ideas among foreign and domestic managers and superintendents, their visits one with another and their inspection of each other's plants would lead one to assume that there could be no private processes, no special machines—in a word, no secrets.

A letter of protest from the head of the chemists' club regarding the lack of information given out by rubber chemists, however, would lead one to infer that some things were still concealed. A careful analysis of papers read by factory managers or chemists at any of the great rubber conventions also reveals a striking absence of new discoveries, novel theories or revolutionary processes. It is, therefore, to be assumed that there are still rubber secrets. Indeed, the whole business of rubber manufacture so lends itself to individual discovery in a thousand different ways that it always has been and always will be a semi-secret industry.

As far as the world at large is concerned, it is wholly secret. The eminent novelist who pictures natives in Africa torturing a man by coating his hands with "boiling rubber" is typical of the distance the average man penetrates into rubber knowledge.

The manufacturers themselves, of course, have the basic facts of compounding, making up, and vulcanization in common. Beyond that, they become more or less individual in practice and often get exceedingly far apart. Here, therefore, is a fruitful field for secrets. For example, a manufacturer of conveyor belting for a specially hard service, experimented for two years to get a compound that would last the longest. By an amalgum of three kinds of crude rubber, by incorporating several ingredients in just the right proportion, and with a cure exactly fitted to the compound, he secured a result that was far ahead of what any other in the series could produce. He not only adopted this for his belts, but naturally guarded it very carefully. A visiting brother manufacturer, although he stayed in the factory for a week, would have no knowledge of this compound. This is but one instance; there are thousands of others, big and little. They enter into cleansing, massing, compounding, calendering, making up, curing and finishing. Special secrets are in the possession of owners, chemists, managers, superintendents and foremen. Some are known to one only; others to half a dozen; still others to some branch of the trade, and so on. As the business grows, the old time secrets become generally known in factories here and abroad; but so varied are the crude rubbers, and the compounding ingredients, so many users demand their own type of rubber product, that fresh secrets take their places. It is, therefore, no exaggeration to state that in matters vital the business of rubber manufacture is today even more of a secret industry than it was twenty years ago. That is why it does not profit those in the lead to take the whole even of the technical world into their confidence.

RETAILERS WANT LOWER SHOE PRICES.

A LOCAL paper reporting the convention recently held in Cincinnati, by the Ohio Retail Shoe Dealers' Association, quotes the attitude of that convention as follows: "The price of rubber has decreased; but there has been no decline in the price of rubber shoes—and we want lower prices." There is nothing reprehensible in this attitude of the retail shoe dealers; the desire for lower prices is a fairly universal one. Everybody feels it in almost every line, and gives more or less frequent and vociferous expression to the feeling; but in this particular case is the demand well founded? The members of the convention reason as follows: "A year and a half ago crude rubber was selling for $3 a pound. Now it is selling for $1.15 a pound—a drop of 60 per cent. Why don't shoes drop?" On the face of it they seem to have the logic with them; but the trouble is they are reasoning without the essential facts. It is true that eighteen months ago rubber sold as high as $3 a

pound; it is equally true that it has recently told for one-third of that amount, but it is not safe to draw a deduction from these facts that it costs only one-third as much now to make shoes as it did eighteen months ago.

As a matter of fact, it is probably safe to say that not an ounce of $3 rubber or rubber anywhere in that vicinity went into footwear, and it is probably equally safe to say that no rubber at the recent low prices has been used in footwear manufacture. The highest-priced rubber that went into boots and shoes during the $3 period would probably be in the neighborhood of $2.25, and it is an equally safe conjecture that the footwear now on the market contains very little rubber that cost the manufacturer less than $1.45. It would be safe to strike an average of about $1.75. So if the manufacturers were to drop their prices even in a remote proportion to the drop in crude prices, they would be selling at a loss.

To be sure, the price lists of the "Tennis" lines, issued September 1, show moderate reductions in certain lines, running in some shoes as high as 10 per cent., but the "Tennis" shoe is not a large consumer of rubber, as compared with all-rubber shoes, and especially as compared with the heavier varieties of rubber footwear, like the lumbermen's goods and boots. The "Tennis" line, therefore, cannot properly be taken as a criterion for the general footwear line.

THE SELF-DECEIVED SUGGESTOR.

THE suggestive individual is not to be frowned upon. He has a large place in modern affairs and should be encouraged. His efforts whether of value or not, should receive adequate thanks, but—that is all. This thought is prompted by certain claims advanced by a brilliant young rubber man for a share in a machine, the invention of which he suggested. The business and industrial world is full of such complacent individuals who doubtless really did suggest improvements of greater or less value and then their effort stopped. Then when after experiment, partial failure and expenditure of brain tissue and money, some worker perfects an invention, the suggestor lays claim to the idea and would if he could share in both its glory and profit. To all of us comes the temptation to say, "I suggested that years ago," but it is one that none but the self-deceived will give voice to. Hundreds suggested a Brooklyn bridge, tunnels under the North River, flying machines, wireless telegraphy, rubber plantations. Their equity in those accomplishments is absolutely nothing. To suggest a million dollars is not to create one cent. Suggest and—forget it.

A DECADE OF AMERICAN RUBBER EXPORTS.

THE tabulation showing manufactured rubber exports from this country for the last ten years, that appeared in the September number of this publication (page 504), is interesting as showing what is being done in an exceedingly important department of rubber manufacture. That table shows that there has been an increase of exports in practically all lines of rubber manufacture, but that the increase has not been uniform among the different lines. The exports of belting, packing and hose, for instance, increased from a value of $634,146 for the year ending June 30, 1902, to $2,163,416 for the year ending June 30, 1911—an increase of 250 per cent. Another interesting feature of the exports in these particular goods lies in the fact that the increase was uniform during the entire ten years, each year showing an advance over its predecessor.

In boots and shoes there was an increase from a value of $1,046,315 to $2,219,480, or an advance in sales of over 100 per cent. The increase in these goods was not uniform, however. The first five years showed a continuous growth in exports, but in the sixth year there was a drop. Another advance took place in the seventh year, with a drop in 1909 to approximately the same figures as were shown in 1905. 1910 showed, however, a marked increase, which continued in the year ending with last June.

The growth of exports in all other rubber goods, exclusive of the lines mentioned above, was quite marked—the figure advancing from $1,781,941 for the year ending June 30, 1902, to $6,564,402 for the year ending with last June, thus showing an increase of about 300 per cent. The exports in these lines show a steady advance from year to year, as in the case of belting, packing and hose.

Now, the first feature of these tabulations to attract attention, is the fact that the increase in rubber footwear exports has not kept pace with the increase of exports in other goods. Exports of boots and shoes barely did more than double in the last ten years, while the foreign sales of belting, packing and hose increased nearly three and one-half times, and of other rubber goods

nearly four times. There does not appear on the surface any good reason why rubber footwear exports should lag behind; there ought to be a wide market in Europe for American footwear. To be sure, the vast snow-covered territory of Russia is barred, the manufacture of rubber footwear in that country being a government monopoly, and imports being prohibited. But there are a great many million people in the British Isles, Norway and Sweden—where they certainly have snow enough—in Germany, France and Austria, who ought to be fair targets for the American rubber shoe manufacturers. There is, to be sure, no lack of local competition, England, Germany, and France all having rubber footwear factories that have long been doing a large and profitable business, but the American rubber shoe, which is lighter, more shapely, and hence more attractive, ought to have no difficulty in attracting custom, particularly in the large cities of England and the continent, where people are not quite so content as their rural compatriots to wear heavy and clumsy looking shoes. Labor in European rubber factories is paid, it goes without saying, much less than in American factories, but over against that disadvantage the American manufacturer has more efficient labor and superior machinery, so that in point of cost he ought not to be seriously handicapped.

Formerly, the American footwear manufacturers assigned as a reason why they were not more active in securing foreign trade, the fact, or the alleged fact that the home market exhausted their capacities, and that consequently there was no particular necessity for looking away from home for customers. That might have been true a decade ago, but with the added manufacturing capacity of the present day in this line, and in face of the situation presented during the past summer, when many of the mills were closed for several weeks, it is fairly obvious that the American footwear factories can easily take care of more business if they could get it, and it would certainly seem as if, with a little more strenuous effort, they could get it abroad.

GOLF BALLS $6,000,000.

WITH the increase in interest in out-of-door sports golf has steadily grown more popular, until today few communities in the United States are without at least a nine-hole course. Five years ago, it was said that there were a quarter of a million golfers in America. Today there are certainly half a million. It is a bit difficult to estimate the number of balls used, for players vary in times over the course, losses, and in the damage they do to the gutta-percha spheres. Then, too, some have old balls remade, and soiled balls painted. It is pretty certain, however, that at least two dozen balls per season are purchased by the average golfer. That means 12,000,000 balls, at $.50 each (the $.75 ones offsetting the remades), there is an investment on the part of golf players of $6,000,000 per annum.

James Ryan, in the "Times of Ceylon" thus prophesies: "There are, however, not wanting signs that at some not distant date something may be done to vulcanize rubber before shipment from Ceylon and Malaya. The process is so excessively simple, and so effectively prevents the daily alteration in quality and appearance of unvulcanized rubber of all grades (except block or very thick sheet) which now occurs, that it only requires a steady and continuous effort on the other side of the water to ensure a steady London demand. Out and out the best sample of rubber in the show was a vulcanized piece of thin sheet from Gikiyanakande. This was vulcanized in England, but it remained unaltered throughout the three weeks it was on show, while unvulcanized estate samples were altering from day to day under the influence of heat, light, oxygenation and enzymes. Even in the case of block rubber, it opens up a vista of possibility which would justify as much expenditure as we Ceylon planters spend on pushing Ceylon tea in America and elsewhere."

Crude rubber from Ceylon or Malaya sells to rubber manufacturers, say, for $1.25 per pound. The same rubber vulcanized on the plantation and sent into the markets would be worth, perhaps, 20 to 30 cents a pound. The reason is that before it could be compounded, calendered, cut and made up it must be devulcanized, and under the most favorable circumstances it would then be worth 50 to 60 cents a pound. That is the actual "vista of possibility" that the plan opens up.

A MARKET FOR CARRIAGE TIRES.

A CONSULAR report from Italy states that in Naples and other Italian cities the chief method of local locomotion is the one-horse cab, and that owing to the iron tire and the rough pavement it is a very uncomfortable means of getting about. The report suggests that here is an excellent market for the solid rubber tire makers of America. The report goes on to say that the same condition prevails in most of the other continental cities and particularly mentions the cities of Greece.

A GREAT LOSS IN SELLING FORCE

SUPPOSE a big department store should attempt to do business under twenty different names; for instance, calling its dry goods department "The Emporium," its grocery department "The Supply Company," its hardware department "The Equipment Store," the book department "The Bibliophile Association," and so on for the other sixteen departments. And suppose, as would be the natural and inevitable consequence, all of its advertising announcements followed this same plan; as if the twenty departments were twenty unrelated undertakings and with no reference to the fact that they were all parts of one concrete enterprise.

This would certainly be a particularly foolish method of conducting business. The store would wholly lose the chief advantage of its size. It could still buy cheaper than its smaller competitor, but most of its selling advantage would be lost. Its advertising force would be frittered away and all the selling power that comes from a great aggregation would be dissipated. In fact the situation would be such a transparent piece of folly that there is no danger whatever that it will ever be witnessed.

And yet a great many manufacturers are resting with evident composure and with apparent content in a position altogether analogous. Instead of adopting a single name or trade mark and placing this on every piece of goods that leaves their factory, they have adopted a dozen different trade marks, sometimes a score or more, often without the least family resemblance; so that only a Sherlock Holmes would be likely ever to discover that they came from the same factory and enjoyed a common parentage.

We will say, for illustration, that the name of the company is "The World Rubber Company." You will probably find its letter-head blazoned with a fine trade mark containing the name with the traditional hemispheres as a background. "Now," you say "there is a good trade mark," and you will expect to find it on all their goods. But to your surprise when you examine their packing you will find that stamped the "Bestever." Their hose will bear the legion "Topnotch;" their tires will be called the "Old Hickory," and the "Everwear," and their shoes will be styled the "Old Glory" line with an undecipherable imitation of a flag flying in the breeze. Likely enough there will be several different trade marks on different articles of the same general line. One piece of hose, for instance, being marked with a red star, and another piece of a little better quality being called the "Silver Moon."

Perhaps the reader may think this an exaggerated presentation of the matter and be disposed to argue that most manufacturers stick quite closely to one trade mark. Perhaps most do, but so many don't that the matter is well worth considering. "What is your regular trade mark?" a manufacturer of a large variety of rubber goods was asked. "Trade Mark?" he replied, "Why I guess we have sixty." A census of his output proved his guess close to the mark.

Now the chief value of the trade mark is the goodwill that grows up around it; the reputation that it comes in time to stand for. This in the course of years, if the business is properly conducted becomes extremely valuable. It is in fact a manufacturer's chief asset. If to good goods and proper business methods is added judicious advertising a trade mark can in time be made familiar to millions of people, so that when a certain article is spoken of, or comes into the mind, it always brings with it the suggestion of that particular brand; just as in the days of our boyhood nobody ever thought of a "show" without thinking of Barnum.

But what manufacturer can ever hope to familiarize the public with sixty trade marks or even with six? In fact why should he try to familiarize them with two when it is twice as easy and half as expensive to familiarize them with one?

Sometimes you hear a manufacturer say, "I know these goods don't all bear my name, but the trade knows who makes them and where to come for them." That is quite true. The drug trade probably knows that certain druggists' sundries bearing a variety of names and stamps are all made by Oldchap & Wayback, but the consumer doesn't know it; and the manufacturer who is pinning his faith solely to the "trade" is likely to find himself on the siding while his competitor goes by on the main track in a special car. The consumer is the man the manufacturer should tie to. Get arm-in-arm with him and you can carry the "trade" in your pocket. And the only way you can get in and keep in with the consumer is to make yourself so easily identified that he will soon come to know you and will recognize you anywhere.

Suppose, for instance, the consumer has tried some of your garden hose that bears your unvarying trade mark on it. It is excellent hose, wears well and he likes it. Now he wants a tire. He goes into a tire shop, looks over various makes and finds one with your name on it. "There," he says, "that man's hose is the best I ever had. I will take his tires on faith." If you had had a different name for your tires, you would have missed that sale—and thousands of others.

The best salesmen in the long run any manufacturer can have are good goods, and the best advertising ever done is the advertising that goes out each day from the mill in the form of a thoroughly satisfying product; but the only way the manufacturer can get the benefit of this sort of salesmanship and advertising is to have his goods so marked that they can always be identified as his. Then every good thing he sends out helps every other article he makes, and if they are all good they all pull together, his hot water bottles helping his shoes, and his shoes helping his tires.

The value of a single trade mark is cumulative; it is at work all the time. Every time it is seen, whether in print or on goods, another impression is made on somebody's mind, an impression that will become an active selling force whenever that particular article is wanted.

But if a manufacturer has twenty or thirty trade marks, or even ten or a dozen, obviously there can be no unity of action, no pulling together, no coöperation whatever. They are all pulling their separate ways. Even if the manufacturer's articles are all excellent each has to make its own way alone, neither getting any help from the others nor being able to afford any help to them; as there is no connecting link to fasten them together. Nor can any effective advertising be done. Half a million dollars judiciously used would serve to bring a single name before the eyes of every reading person in the United States and do it with sufficient force to make a palpable impression on the greater number of these minds; but twice that sum scattered over ten different names would not be able to produce any appreciable effect.

Of course the exigency of trade may sometimes induce a manufacturer to make certain goods whose parentage he prefers not to have disclosed. In that case he is wise to give them unidentifiable names. But where he is not ashamed of his goods, where he really looks upon them as thoroughly creditable, he ought certainly to have them so marked that he will get the credit.

It is quite possible for a manufacturer to build up one good reputation, but he can't build up twenty.

Field Marshal Lord Kitchener, the British general, whose several African campaigns have given him an excellent idea of the nature and possibilities of the country, is reported to be going into rubber planting. He has taken up land at Muhoroni, in a very fertile district, near the Uganda railway and about 550 miles from Mombasa and 38 miles from Lake Victoria Nyanza, where it is said that he will grow *Ceara* rubber.

The Brazilian Rubber Congress.

WITH a view to defining and elucidating the situation, a congress was opened on August 14, at the Ministry of Agriculture, Rio de Janeiro, composed of delegates from the rubber producing States of Brazil and from various Brazilian commercial bodies, interested in the solution of the rubber crisis. The congress was under the presidency of Dr. Pedro de Toledo, Minister of Agriculture.

Among those present was Señhor Monteiro de Souza, deputy, representing the State of Amazonas and the Manaos Commercial Association; Señhor Passos de Miranda, deputy, representing the State of Pará; Dr. Henrique Hirsch (of Messrs. Adolph Hirsch & Co.), representing the Bahia Commercial Association; as well as a number of delegates from other parts of Brazil.

In his opening remarks, the president alluded to the rubber crisis prevailing in the north of Brazil; affecting, as it did, the second in importance of the export products of the country, and the source of a great part of the national wealth. Sacrifices would be necessary, but would be amply repaid by the industrial and commercial development of northern Brazil. With this view, it had been considered advisable to formulate an organized plan, acceptable to the government, in the elaboration of which material help had been given by Dr. Mendes, director of the Commercial Museum, and Dr. Pereira da Silva, the well-known engineer.

The project, Dr. de Toledo added, had been drawn up in complete accord with the views of the president of the republic. It embraces a systematic program of suitable measures, which, when once carried into effect, would ensure a period of prosperity to the rubber-growing States.

When the reading of the plan, of which translation is subjoined, had been concluded, Señhor Passos de Miranda expressed his approval of same. Señhor Henrique Hirsch, the delegate of the Bahia Commercial Association, asked whether the project was susceptible of modification. Dr. de Toledo replied that the proposals represented the initiative of the government, with a view to meeting the competition of Far Eastern rubber. The plan was economic rather than financial in character; the government being prohibited from entering into trading operations, for the solution of the present crisis. The project, he added, was subject to such modifications as might be dictated by the experience of the delegates.

A proposal was unanimously accepted for the appointment of a committee of five members to study the plan elaborated by the government and to present a report at the second session, to be held a week later. The delegates selected for this committee were Messrs. Monteiro de Souza, Passos de Miranda, João Cabral, Henrique Hirsch, and Arthur Orlando.

* * *

At the second session of the Congress, held on August 22, Señhor Passos de Miranda, delegate from the State of Pará, and spokesman of the special committee which had been investigating the government proposals, presented a report from that body to the effect, that being impressed with the prospective benefits and results to be anticipated from the proposals submitted, they requested the government to take into consideration the slight alterations suggested and to examine the supplementary proposals, as justified by their respective authors, with a view of seeing how far the requirements indicated could be complied with.

The president (the Minister of Agriculture) then stated that the recommendations of the special committee would receive the due consideration of the government, and would be published in full. The suggested alterations proposed in Section 2, that the money prizes should be given for *Hevea*, as being the best quality of rubber; in Section 4, that the 25 years would count from the date of the promulgation of the law. In Section 8 (second object) par. b, it was proposed to establish a field of demonstration in Matto Grosso.

In conclusion, the president added that after careful study, the whole matter would be submitted to the Federal Congress for ultimate decision; the valuable interests of northern Brazil being duly regarded and protected. In order to carry out the plans in view, the co-operation would be needed of the state and municipal governments. He expressed appreciation of the work of the delegates, to whom he tendered cordial thanks.

On the motion of Dr. João Cabral, delegate of the State of Piauhy, the following resolution was adopted without debate:

"The representatives of the States, commercial associations and other interested bodies, assembled in the present Congress, upon the invitation of the Honorable Minister of Agriculture, to study the problem of the north of Brazil, wishing to declare itself as to the plan elaborated by the government, to be submitted to the appreciation of the Congress, hereby express their great satisfaction with and sincere approval of same. It is conceived with judgment, patriotism and decisiveness on the part of the government in dealing with this problem, of vital importance for northern Brazil."

After the passing of this resolution, the president declared the congress terminated.

* * *

PROPOSALS SUBMITTED TO THE CONGRESS.

The following proposals were submitted to the Rubber Congress, held at Rio de Janeiro, August 14, 1911.

1. The exemption from all import duties of all utensils and materials intended for the cultivation, gathering and treatment of three descriptions of rubber (*Hevea, Manicoba* and *Mangabeira*), whether only for purposes of extraction or for cultivation.

2. The awarding of money prizes under two categories: (a) for *Hevea, Manicoba or Mangabeira;* (b) for other descriptions; in such a way as to promote the ground being suitably utilized, as well as for the entirely new cultivation of any description of rubber.

The prizes will be awarded for sections of 25 hectares (about 62½ acres) in the first category and of 12 hectares (about 30 acres) in the second. They will be based upon the species of tree cultivated, and the outlay during the year immediately preceding the commencement of production.

3. The establishment at convenient, selected points, of experimental stations or fields of demonstration for the cultivation of *Hevea* in the State of Amazonas and the interior of Maranham (in one of the valleys of Tury-Assú, or of Mearim, Jequitinhoaha or the Contas river); and for the cultivation of *Manicoba* in the South of Piauhy, in the interior of Serido, in Rio Grande do Norte, in the south of Bahia, in the north of Minas and in the interior of São Paulo. These stations should furnish annually to all interested persons, information as to results obtained and seeds selected, as well as instructions with reference to the best methods of cultivation.

4. General reduction to one half, of the present federal state or municipal export duties on rubber from native trees, with the exception of Caucho; and the complete elimination of these duties during 25 years, for plantation rubber produced from the same species of trees.

5. Concession of the privileges necessary and sufficient for the establishment of refining plants, which will reduce each species of rubber to a uniform type for export.

6. Concession of the privileges and advantages necessary for plants manufacturing rubber goods, seeking to establish themselves in the country; particularly at Manáos, Pará, Pernambuco, Bahia and Rio de Janeiro.

7. Organization of a permanent service for aiding workers, whether native or foreign, who come of their own initiative, or with their traveling expenses paid by the Federal Government or by the Brazilian states, to the valley of the Amazon; including the construction of three hospitals of sufficient capacity at Pará, Manáos and a convenient point in the federal territory of Acre. The organization and objects should be identical with those of the Ilhas das Flores, or some hospitals of the interior; the hospitals to be surrounded by small agricultural colonies, where patients can be received for gratuitous treatment and vaccination, with facilities for selling medicines of the highest quality, especially sulphate of quinine, also for the extensive distribution of printed matter containing recommendations as to hygienic measures for the prevention of diseases, as well as rules and methods for curative treatment in the absence of a doctor.

8. With special reference to *Hevea* rubber, the following measures should be carried out with the greatest urgency, intended to facilitate and cheapen transportation within the valley of the Amazon and also to provide such transportation between that point and the states of the North-East and South, as may allow of supplying the markets of distribution with an abundance of healthful alimentation.

In connection with the first object:

(a.) Construction of a railroad starting from a convenient point on the Madeira and Mamoré line, near the mouth of the River Abuman by Villa Rio Branco and a point between Senna Madureira and Catay, and terminating at Villa Thaumaturgo, with a branch to the Peruvian frontier in the valley of the River Purus. As the construction of this railroad will be a measure of considerable importance for the supply under favorable conditions of all descriptions of imports to the federal territory of Acre, Porto Velho, on the River Madeira, should be open to the commerce of all nations.

(b.) Construction of a railroad uniting the valley of Amazonas with the northeastern and southern states of Brazil.

(c.) Improvement in the navigable conditions of the River Negro, as far as Cucuhy; of the Branco, as far as Boa Vista; the Purus, as far as Senna Madureira; and the Acre, as far as Rie Zinho.

(d.) Exemption from import dues of steamers intended to navigate the rivers, and the revision (with the object of reducing and simplifying the present burdens) of the Coasting and River Navigation Laws.

(e.) Concession of indirect favors, including exemption from import duties, of an enterprise proposing to establish depots of coal at convenient points to be chosen, intended to supply steamers at the lowest possible prices.

In connection with the second object:

(a.) To lease two of the national farms of Rio Branco, to a suitable enterprise, engaging to carry out on a large scale the breeding of cattle, and to cultivate cereals (maize, beans, rice, manioc, etc.); also to establish a packing house, to make dairy products, with machinery for the treatment of rice and other cereals and for the manufacture of manioc flour.

(b.) Direct colonization, in conjunction with the administration, of the farm of São Marcos to the north of the River Uraricoera, with families of agriculturists and cattle breeders; having in view the development of production of the above-named alimentary articles on the farmes leased by the Government, and also particularly the breeding of cattle, horses and mules.

(c.) Concession of privileges to three companies, which may wish to establish large farms on the above conditions in the territory of Acre, between Rio Branco and Xapury; in the state of Amazonas, in the zone of the river Autaz; and in the state of Pará at a point convenient to the Lower Amazon.

(d.) Concession of privileges for the establishment of a company for the purpose of fishing, properly equipped to salt and can fish.

9. With special reference to the federal territory of Acre, the immediate definition and consequent recognition of lands now held and the granting of the definite titles.

10. The holding of triennial expositions at Rio de Janeiro, as well as the awarding of prizes for the best product and processes.

A GERMAN VIEW OF BRAZILIAN RUBBER.

IN dealing with the questions now affecting Brazilian rubber, the Rio de Janeiro correspondent of the "Hamburger Nachrichten," calls attention to the fact, that out of the $315,000,000 represented by the aggregate exports of Brazil in 1910, about $132,500,000 consisted of coffee and $122,500,000 of rubber. The rubber question is thus a vital one for that country.

The worst point now affecting Brazilian rubber, it is remarked, is not the present low price (for which North American speculators are held responsible), but the constantly increasing competition of the rubber plantations of India, Ceylon, the large Sunda islands, the German colonies in Africa, etc. Brazil would, it is added, be quite able to withstand this competition, if the cost of production were diminished and if, above all, the three principal factors, which increase the cost of Brazilian rubber, were wholly or partially eliminated. These are:

1. The export duty of 22 per cent., on the value, which is levied in Pará and Amazonas, as well as in the Federal Territory of Acre.

2. The excessively high price of the necessaries of life in the rubber territory, where nothing is grown.

3. The high cost of transportation as a result of the Coasting Law.

With reference to the last-named point, it is remarked that the Amazon, with its tributary streams, has about 30,000 miles of good navigation. It might be expected that under such favorable circumstances, transportation would be cheap; in fact cheaper than in any part of the world. The Brazilian law, however, requires for a steamer of 300-500 tons, the same number of officers and as large a crew as for an ocean steamer of 1,000 tons. Steamers and other craft which ply between Manáos and the Madeira-Mamoré territory have thus to carry excessive crews.

According to the statement of an American engineer, the freight rate from Pará, to São Antonio in the territory named, amounts to the equivalent of $25 a ton, while the rate from Antwerp to the same port only equals $7.50 a ton. In conclusion it is pertinently remarked:

"Under these circumstances, it is clear that neither the rubber business, nor any form of industry can prosper. A primary condition of prosperity is a change in the Navigation law, which is the real cause of the unsatisfactory state of transportation, not only in the Amazon territory, but throughout the Brazilian coast in general."

THE "VINDICATOR" OF YOUNGSTOWN, OHIO, IS THE AUTHORITY for the statement that the Republic tires sold by the E. A. Wick Rubber Company of that city have been used on the police patrol wagon for the last three months without a puncture and with the same air originally put in. Now this is either an excellent commentary on the quality of these tires, or viewed in another way it may simply be a proof of the propriety with which the people of Youngstown conduct themselves. Possibly the patrol wagon has not been in use during the past three months. However, it is only just to give the tires the benefit of the doubt and to assume that the patrol wagon has been constantly on the go.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

WITH regard to the movement on foot to admit rubber manufacturers and merchants to the Exchange under their own organization, and to list crude rubber, I may say that in my opinion this should tend towards the betterment of the trade generally, provided that any substantial rubber manufacturer can become a member; and this more particularly as rubber is used by the speculator for his own private gains. It should give manufacturers a better chance of arranging qualities, terms and conditions, so as to suit the trade generally. Such terms, conditions, etc., when formally decided upon should be printed for circulation in the trade, to be available for buyers on application. At present the brokers appear to make their own terms, which are often arbitrary and to the detriment of the trade who are the actual consumers. It is quite time the trade throughout the world made a decided stand against accepting terms and conditions in the making of which they were not consulted. Another essential point is that all rubbers should be marketed under a definite name. Rubber obtained by chemical processes from plants containing it, should be listed as extracted rubber and not masquerade as washed rubber. A proper grading of rubber should be decided on and the question of drafts, shrinkage and standard qualities could be better arranged by manufacturers than by financial houses which frequently lack the necessary expert knowledge. At present a manufacturer plans say a contract for several tons of rubber, delivery over various months, and he will probably find that his washing tables of the various deliveries show a variation of 10 per cent. to 15 per cent. There should be a fixed marginal allowance for shrinkage; and who could better decide this than the manufacturers? I much doubt if there is any other commercial commodity in which the buyer takes so much risk as he does with rubber. The New York Produce Exchange suggestion is the first move in the right direction, and if it is taken up as it deserves to be, no doubt other large centres will follow suit. This would in my opinion lead to more consistent markets, well known conditions and terms, and keep the trade in constant touch with the actual markets to the undoubted benefit of manufacturers. In conclusion I may say that arbitration would be of benefit to the trade, so long as the trade is well represented on any arbitration board.

THE NEW YORK PRODUCE EXCHANGE.

FOR a small place this is now quite an important centre of the trade, containing as it does the large works of the Leyland and Birmingham Rubber Company, Limited; the newly erected works of Wood-Milne, Limited, formerly Whitehead & Roberts; the works of J. E. Baxter & Company, formerly the Dialene Company; the large new factory of Leyland Motors, Limited, and the rubber machinery works of Iddon Brothers, Limited. All these works are situated quite close to one another, and it is not surprising that the population of the village has increased, owing to the demand for labor. The Leyland Motors are busy, and have recently received an important order from a government department for their vehicles. An interesting feature about the Wood-Milne rubber washing plant is the installation of a complete purification plant of the Mather & Platt type, by which the washing water is freed from both its dissolved and suspended impurities and used over and over again. The water supply, both for the washing and the condensing plants, is drawn from a small brook running through the premises; there being other users of the water lower down stream who would object to any defilement of the water by trade effluents. An alumina and iron precipitant is used to remove the soluble impurities in the wash water, and as such impurities are nitrogenous, it is no surprise to hear that the sludge after being filter-pressed commands a sale in the district as a fertilizer. I don't know whether any other rubber works have a similar purification plant, but they are certainly not common, and their adoption I suppose is entirely a matter of exigency, owing to prevailing conditions of water supply; as I hardly suppose that the first cost and upkeep of the apparatus would be met by the sale of the recovered impurities. The reduction of the dividend of the Leyland and Birmingham Rubber Company, Limited, from 7½ to 5 per cent., caused some surprise and has led to some fall in the quotation for the shares.

LEYLAND.

THE series of strikes which culminated in the great (though fortunately only short-lived) railway strike in mid-August, has of course interfered seriously with trade in the industrial centres. Shortage of rubber and lack of coal led to more than one important rubber factory being shut down, and of course the closing down of cotton mills and other concerns led to a falling off in demand for certain classes of rubber goods. At the time of writing I hear of threatened trouble on a large scale with the india-rubber workers, whose union is now taking a more important position than was the case only a year ago. There has been a lock-out at Messrs. W. T. Glover & Company's cable works at Manchester, and a strike satisfactorily settled at the works of the New Liverpool Rubber Company, Limited.

THE STRIKE FEVER.

The railway strike led to a great demand for town taxicabs, long distances being covered at somewhat extortionate rates. Doubtless tires suffered severely on the hard roads; indeed for some months now, owing to the results of the dry season, motor tire wear has been excessive. Besides the demand for taxicabs, motor vehicles were in great request by newspaper offices and various tradesmen, the newspaper people being about the only ones who were unable to put the cost on to the selling price of their goods.

A PATENT has been obtained by C. J. Beaver and E. A. Claremont for strengthening rubber sheet cord and strip by a mechanical process and they describe a special machine for the process. The patentees are both connected with the cable works of W. T. Glover & Company, Limited, Manchester. They point out that ordinary rubber sheet and strip is mechanically weak and tears easily on being stretched. They further state that it is common practice to modify or eradicate this weakness by various processes, such as vulcanizing, exposure to atmospheric influences, alternately heating and cooling, etc. The inventors propose to discard the older processes and to produce the desired effect by alternately stretching the rubber quickly and then allowing it to contract by releasing. This is to be done very quickly so that the tendency to tear has not time to come into operation. Of course it has long been a *desideratum* with the makers of cut or spread pure rubber sheet, to so harden it that it will stand considerable pulling without tearing, and in this respect there is considerable difference in the quality of the strip supplied for electrical purposes by different firms. The exact means by which the hardening is carried out, is to a large extent one of the few trade secrets preserved in the industry. Last year I noticed an advertisement in a daily paper published in a rubber manufacturing center, for details of such

STRENGTHENING RUBBER SHEET.

a process, indicating that some firm was desirous of getting on terms with a competitor. This is one of those cases where the man who knows how to produce the effect, though he may be only a workman at one pound a week, is of much more use than the chemical expert, as no amount of laboratory investigation will reveal the details of the process to which the rubber has been subjected, unless it has been cold-cured, which, of course, can be detected. Messrs. Glover are large users of rubber strip for insulating purposes, and the invention which has emanated from their works must be considered as of considerable technical importance.

RUBBER FROM NATAL.

THE reference under the heading in the August 1 issue of THE INDIA RUBBER WORLD is of more importance today than it would have been before the extraction of rubber from highly resinous *laticos* had been undertaken on a commercial scale. I am not aware that such procedure has yet established itself as a commercial success, but that does not matter at the moment. Your notice says that the *Tirucalli* tree which abounds in Northern Natal is to receive the attention of capitalists, and the composition of the latex is given as 10 to 20 per cent. of fine rubber with 50 per cent. resin—the rest presumably being water. This is probably the same latex as has been obtained in a small way from a district in Pondoland, Cape Colony, where the trees abound. A year or so ago samples of this rubber were before me and closely resembled a good quality of Pontianak; the general composition of the substance free from water being rubber 27, resins 73. As far as I know nothing was done with the concession whence these samples came, but if there really is a demand for the residual resin there seems no reason why competitors to the Goebilt Works in Borneo should not spring up in South Africa.

BRAZILIAN PLANS.

PLANTERS in the East will no doubt be much interested in what the editor says in THE INDIA RUBBER WORLD for August 1 regarding the measures Brazil is taking to maintain her threatened supremacy in the rubber market. Leaving the financial proposals on one side, I note with interest that it is proposed to wash rubber before sale and transport and to export only one quality—the best. I am not sure, however, that this is altogether a step in the right direction; at any rate it is a move that should not be undertaken without the expressed approval of the principal manufacturers of the world. There are many who hold the opinion that rubber travels all the better when it contains 10 to 15 per cent. of water in its pores. Of course in the present days of quick ocean transit this consideration is of less importance than it was formerly, and in addition there is the saving in freight to be considered. Still the manufacturer has a great desire to see his rubber in the raw state and to wash and dry it according to his own ideal. This is more particularly as regards fine Pará. With respect to lower grades of Pará, especially negrohead, I do not see any objection to a partial purification before export so as to produce a more standard grade. Possibly, too, the removal of the bulk of the albuminous matter would tend to produce a better rubber.

LONDON VENTURE CORPORATION, LTD.

MR. FOWLER, who has recently succeeded Mr. Baker as chairman of this concern, confessed at the annual meeting held on August 30 that the directors had been unduly optimistic as to the trend of rubber prices last year. They had been misled, he said, by experts in Mincing Lane who had predicted a rise instead of the steady fall in values which took place. It strikes me that there are a good many experts of last year who are in a position to be shot at by company chairmen seeing how many companies there are which have signally failed to fulfil the promises of the prospectuses. The Venture Corporation had to express their disappointment up to date, at least, with the Madagascar Rubber Co., Limited, and the Crude Rubber Washing Co., Limited, though nothing could be said in detail about the latter, as its balance sheet is not yet published. The persistent unsatisfactory results which have attended the great bulk of wild rubber enterprises when financed in Europe, seem to have been also the lot of the Madagascar Company, where the local difficulties have as usual proved greater than was expected. There is one point about these and other rubber flotations which seems somewhat anomalous. The directors express themselves as having great faith in the future, so one would have thought that there would have been sufficient buying of the shares at the very low figures to which they have fallen, to give a little life to the market and bring prices to a higher level.

MAN AND RUBBER.

It's marvelous to contemplate
How rubberized is modern man,
How much the gum *elastica*
Pervades his whole terrestrial span.

In infancy it is his joy
A rubber rattle to expound,
And all his life a rubber ball
Provides him happiness profound.

With rubber coat upon his back,
His feet encased in rubber shoes,
He laughs the elements to scorn,
And gives the doctors all the blues.

The lightning with its forked tongue,
That flames across the vivid skies,
With rubber gloves upon his hands,
Like ancient Ajax he defies.

A rubber cord restrains his hat
From soaring in the sportive breeze,
While rubber heels make life's hard road
A dallying primrose path of ease.

His trousers' trim Apollo set
To rubber galluses he owes,
And rubber garters drive away
All wrinkles from his lurid hose.

With rubber comb his wayward locks
Are taught the proper way to go;
His molars with a rubber brush
Grow whiter than the driven snow.

He darts about from place to place,
A gay triumphant space-defier,
Unjarred by rough and rocky roads,
Soft-cushioned on a rubber tire.

And when the doctors, full of glee,
At last the hapless man persuade
To have that old appendix out,
On rubber blankets he is laid.

So when you come to look at man,
It's more than passing plain to see
How much his fate and fortune hang
Upon the gummy rubber tree.

THE accepted authority on South American rubber—"The Rubber County of the Amazon," by Henry C. Pearson.

Some Rubber Interests in Europe.

GREAT BRITAIN.

The Mincing Lane Share Exchange was recently organized in London to deal mainly in rubber and tea shares. The purpose of the organization was to inaugurate well defined rules for regulating the relations between brokers and customers, which have hitherto often been confused and unsatisfactory.

Announcement is made that the North British Rubber Company, Limited (Edinburgh), which has during the last few years erected factories at Paris, Berlin and other continental points, has decided to build a plant at Aalborg, Denmark, in connection with certain financial interests in that country. It is expected that the annual output at the start will be about 500,000 pairs of footwear.

Wood-Milne, Limited (Preston, England), are advertising a "steelrubber" solid tire for motor cars, and describe the material as "a unique amalgamation of hair-like stands of steel with finest Pará rubber," and they claim that this composition embodies the elasticity and shock-absorbing qualities of rubber with the toughness and durability of steel, and moreover that it is non-skid. Some of the footwear manufacturers have experimented with soling made of "steel-wool," which is a combination of rubber with fine steel filings, the claim being that this rendered the sole non-slipping, but the success of the steel-wool sole has not been conclusively proved. This new "steel-rubber" tire will be watched with interest.

The Awards Committee of the International Rubber and Allied Trades Exhibition, awarded on September 14 the "India Rubber Journal" (London) Hundred Guinea Shield, for the best sample of Plantation Pará rubber shown at the exhibition, to The Sungei Kapar Rubber Co., Limited, Selangor, Federated Malay States, which secured 96.5 points, and highly commended the following companies which received over 90, but under 96 points:

Siriniesa Estate, Ceylon; Tremelbye Rubber Co., Limited, Federated Malay States; Bukit Rajah Rubber Co., Limited, Federated Malay States; Highlands & Lowlands Pará Rubber Co., Limited, Federated Malay States; Culloden Estate, Ceylon; Klanang Produce Co., Limited, Federated Malay States.

The "Grenier's Rubber News" (F. M. S.) Silver Trophy was also awarded to The Sungei Kapar Rubber Co., Limited.

The award was made by Sir Henry A. Blake, G. C. M. G., president of the International Rubber Exhibition, who congratulated the company which had won both prizes and Mr. Gordon Dickson responded in behalf of the Sungei Kapar company.

The British West African Association has transferred its offices from 75a Queen Victoria street to Revenue House, 7 and 8, Poultry, and 36 and 37 Bucklersbury, London, E. C., at which address a room has been opened for the permanent exhibits of African products. There are also extensive and comprehensive reading rooms connected with the association's offices covering the various industries of British West Africa.

The North British Rubber Co., Limited, Edinburgh, makes a detachable rim which is said to be extremely easy to manipulate, a fact which is largely due to a novel expanding and contracting clinch band which carries the tire. This band is provided with a number of incurved hooks or projections, practically forming a rim, which engage with the beaded edges of the tire. One side flange is permanently shrunk on to the wheel, while the other is detachable. When the detachable flange is withdrawn, the tire attached to the band (to which the security bolts are fixed) is easily pushed on or drawn off. The tire having been placed into position, the detachable portion of the rim is inserted and is automatically locked with spring-controlled bolts. A tire can be detached, a new tube inserted, and the whole replaced in a few minutes.

SECOND REPORT OF THE RUBBER SECURITIES, LIMITED.

THE difference between a year ago and now in the rubber promotion world is shown quite vividly in the difference between the recently issued second annual report of the Rubber Securities, Limited (London) and its first report, issued a year ago. In its first report it showed a net profit of £15,000 [$72,997.50] made up from profits on share transactions, interests and commissions. The shareholders were paid a 20 per cent. dividend and the sum of £9,800 [$47,691.70] was carried forward. The recent report shows a net profit for the past year of £800 [$3,893.20]. But with the amount brought over from last year they can still make a fairly respectable showing.

THE CONTINENTAL'S NEW MANCHESTER PREMISES.

MUCH appreciation has been displayed of the new premises of the Continental Tire and Rubber Co., at 248-252 Deansgate, Manchester, which are considered to rank among the finest specimens of Manchester commercial architecture and to invite comparison with those of London.

MOTOR AND TIRE EXPOSITIONS IN LONDON.

Two interesting events are scheduled for November in London. The Olympia Motor Show will be held from 3d to 11th, while the Cycle and Motorcycle Exhibition will take place from 20th to 25th. Both displays will be at Olympia.

Tires will be prominently represented on the later occasion; some of the exhibitors being of international reputation, such as Dunlop Pneumatic Tire Co., B. F. Goodrich Co., Michelin Tire Co., and others.

WRINGING MACHINE TRADE AT THE LEIPZIG FAIR.

WHILE, generally speaking, the results of this year's Leipzig Autumn Fair, are said to be much less important than those recorded a year ago, the cautious policy of buyers is attributed to political uncertainties. Business in wringing machines, on the other hand, displayed activity in harmony with the increasing demand in this branch.

THE GERMAN RUBBER STEEL TRADE.

ACCORDING to a special report in the "Gummi-Zeitung" upon the features of the rubber heel trade at the recent Leipzig fair, the collections shown on that occasion included a large variety of shapes. Well known marks, as usual, were most in favor. Purchases for export were in the aggregate on a scale of largely augmented importance, while there was a falling off in the direct operations of American buyers.

NEW GERMAN RUBBER FACTORY.

THE establishment is announced at Frankfurt-on-Main, of a new rubber factory by Messrs. Heinrich and Louis Peters. These gentlemen have been respectively manager of the works and commercial director of the Louis Peter Aktiengesellschaft.

AUSTRALIA.

THE Colonial Rubber Co., Limited (Sydney) has changed its name to The Johnston Tyre and Colonial Rubber Co., Limited. The present directors of the company are Samuel Hordern, Anthony Hordern, W. A. Anderson, G. G. Johnston, J. H. Wylde-Brown, and A. S. Harrison.

THE SWEDISH RUBBER INDUSTRY.

SWEDISH statistics for the year 1909 indicate that there were in that country 9 plants manufacturing rubber products, employing in the aggregate 1,352 hands; the annual production equalling $2,432,791. The value of the total output was about 2 per cent. less than that of 1908, and about 5 per cent. below the figure of 1907. About 80 per cent. of the production was in rubber shoes.

The Rubber Opportunity in Brazil.*

THERE may be purchased in the market of the world today about forty distinct sorts of rubber. These vary in quality, quantity, and price very widely. Of them all none have such value in the manufacture of rubber goods as the product of the *Hevea Brasiliensis*, commonly known as Pará rubber, and grown wild on the Amazon river and its affluents. In resilience, in lasting qualities, and far more important, in its wonderful assimilative qualities as a compound receiver, no other rubber has approached it in genuine and practical value. From the time of Goodyear, Hancock, and other early discoverers of its virtues, it has been the standard, and its continued presence in the market is what has made the present expansion of the trade possible. Rubber manufacturers who add to it earths, metallic oxides, and who amalgamate with it rubber-like gums in infinite variety, sometimes fail to realize that the basic value of their goods lies in the presence of the Pará rubber.

Another fact that the industrial world fails to sufficiently recognize is the marvel that a region little known, sparsely settled, vast in extent, covered with forests that in places are impenetrable, without great banking facilities, and with no scientific assistance, should have produced the most and the best rubber, and should do it year after year.

With great forests still unexplored, with a possibility that vast areas not contiguous to the waterways may be full of mature rubber trees ready for exploitation it will be at once suggested that the opening up of such fields is far better and will yield richer immediate results than can any planting proposition. The fact is that both should be developed to their utmost. To satisfy the world's needs particularly during a period of high prices every available rubber tree should be located and tapped. It must not be forgotten, however, that rubber distant from the waterways will cost more to collect and transport, and often only the highest market prices will warrant its gathering. That planting should go hand in hand with this work admits of almost no argument. No one can forecast the future prices at which fine Pará will sell. A score of happenings may cause a drop in price—a general industrial strike in the United States and Europe—the production of some cheap plastic by synthesis that shall take the place of rubber in a multitude of places where the resilience and nerve of fine Pará are not needed—these and a multitude of other possibilities might put the price of rubber, gathered as it is, so low as to seriously embarrass the present producers. To prepare therefore for such eventualities and to meet the competition of the world of planted rubber in Ceylon, the Federated Malay States, Borneo, Java, Sumatra, India, Africa and in the British and Dutch possessions in the West Indies, rubber planting would seem to be the logical course. With all of its advantages of soil, climate, rainfall, and abundant seed supply, the Amazon country certainly should be able to produce plantation rubber as quickly, cheaply and more surely than any other part of the tropical world. As to the advantages, if Nigri Sembilan can plant the *Hevea*, the tree of the Amazon, and from young trees get 3 lbs. and 2 oz. of rubber at a cost per pound of less than 25 cents , why not Amazonas? If Partit Buntar can gather from 17 year old trees 28½ pounds in one year, why should not the tree planted on the Amazon produce 30? The practical value of half a dozen successful plantations right here among rubber producers can hardly be overestimated. By reason of the greater profits shown, the gatherer of wild rubber would study plantation methods and wherever they could be adopted would see to it that they were.

I should be the last one to force upon the rubber gatherer any complicated tool or new process designed to do away with the present cutting instrument and coagulation by smoking. They are both simple and have given to the world the best rubber that it has. A great industry must be changed over slowly, and for wild rubber there is nothing at present that can be safely recommended as adapted to the laborers and the conditions. With successful plantations competing with the rest of the world, however, new methods are sure to be evolved which will eventuate in a larger and better production. If all of the wild rubber trees in Brazil were gathered together into plantations as they are in the Middle East the annual production could certainly be doubled, and the product be 90 per cent. fine and 10 per cent. coarse and even better. Just as eternal vigilance is the price of liberty in citizenship, so immediate and intelligent planting is the price of supremacy in rubber production.

Today this State is in an enviable position in this one particular. The rest of the world has done all of the experimenting. Twenty years ago few knew anything with certainty. Millions were spent in planting *Castilloa* on rocky hillsides or in shallow earth pockets, in expecting the *manihot* to do well in rich soil with abundant rainfall—in shade planting, sun planting, weeding, etc. Today so thoroughly is the subject known that not only does one know that the *Hevea Brasiliensis* is the best tree to plant, but every phase of it—seed selection, soil, culture, and preparation are all a matter of scientific record. As for tapping and smoking Amazonas knows her share of how to do that from long and profitable practise.

It should not be forgotten, however, that with large plantings of *Hevea*, or anything else will come new problems. There will be new tree diseases that the wild trees have never suffered from, new insect pests, of which the old rubber producer never knew. For that reason the State should have advice in the person of at least one practical scientific rubber planting expert. Later when comes the rush for lands for planting there should be experiment gardens, entomologists, mycologists, etc., who will guard the vested interests from the vengeance of jealous nature.

The *Hevea Brasiliensis* is one of the most wonderful trees in the world as regards its adaptiveness. Given moisture, heat and a fair amount of plant food, and it grows cheerfully and lustily anywhere. It, however, shows its best growth in rich alluvial soil. It never flourishes where the water stands about its roots for a long period. Inundations it does not mind if the soil be of such a nature that the water soaks in slowly and then flows away again before oversaturation has taken place. As long as there is plenty of rainfall and abundant moisture in the air, the tree will grow in any fairly rich soil. It is better of course to plant it on ground that will not be inundated, as it is safer. It is better also if possible to clear without burning, as the fire destroys much of the best of the plant food. Certainly the plantations should be located near the waterways for easy transportation, and near the villages and cities to get laborers.

With a greatly stimulated industry through planting will come, slowly at first, colonization by individual planters if they have certain government aid. Once the business is established and the great Indian coolie producing countries are assured that their laborers are to be well cared for, thousands can be

*Prize essay presented in Portuguese by the Editor of THE INDIA RUBBER WORLD at the Rubber Congress at Manáos, February, 1909. It is published now with the hope that it will draw fresh attention to Brazil's duty and opportunity.

secured. The Spanish and Portuguese possessions, and certain of the Mediterranean countries could furnish many colonists, America and Europe once interested and convinced would furnish capital if any were needed, and China and Japan would also undoubtedly furnish coolies.

Of the methods generally employed in collecting and coagulating the latex of the *Hevea Brasiliensis* which should be preferred? For wild rubber where the gatherer works away from the supervision of a foreman, it would be very risky to make any change at present. He is doing good work with simple tools that he understands. His well smoked rubber is the best in the world. For plantations I should favor the herring-bone style of tapping with some such tool as your own Dr. Huber designed for his experiments in the Botanic Gardens in the city of Pará. The latex would naturally be collected in cups, brought to a central point, strained and smoked.

I would begin to put some planting enthusiasm into every inhabitant of Amazonas. So far in this beautiful city, I have not seen a single *Hevea*. A city that owes so much to rubber should certainly have them everywhere in evidence. They should be in the parks, in the private gardens, in the suburbs. Any householder who did not possess at least one, should teach the children to know the tree and to have a pride in planting it. Once make it a patriotic duty and the whole of Brazil will go a-planting.

Unless an individual corporation, or a producing country is in a position to distance all competitors, it is likely to be put out of business. Pará rubber is not copyrighted, it is not protected by patents. The whole tropical world has the seeds of the *Hevea*, and in the Middle East alone, there are now 400,000 acres of Pará rubber trees. With the wonderful industrial expansion that the world has of late seen, and a fair promise of its continuance, the product of the Amazon and of the East can be absorbed at good prices, but from a business stand point if Amazonas does not put herself in a position to produce more rubber and cheaper rubber, it is bound to be done elsewhere with the possibility of disaster to those who can not get down to existing production prices. I believe that the Amazon can and will one day produce infinitely more rubber than it does today and will be able to market it at such a price that scores of new and great uses in the arts will develop and that the producer will make greater profits than he has enjoyed in the past.

THE "WALL STREET JOURNAL" IN REPLY TO AN inquiry by one of its readers regarding the United States Rubber Company's preferred stock as an investment observed as follows:

"United States Rubber first preferred stock is an 8 per cent. non-cumulative issue which has received its dividends regularly since the readjustment of the company's financial arrangements in 1905. In the last five years the average annual surplus available for dividends was equivalent to 10.35 per cent., and in the last year this surplus was equivalent to 13.83 per cent. At current levels the stock yields 7.07 per cent., which places it upon a very attractive basis of returns. The shares of this company have never been very popular with careful investors, nor have they enjoyed a very active market. The issue under consideration is not generally classed by the conservative as being representative of the highest type of industrial stocks. This is indicated by the high yield. The articles of incorporation of the United States Rubber Co. provide that in case of liquidation or dissolution the first preferred stockholders shall be entitled to receive par for their stock, having preference to this extent over the second preferred and common stock. According to the last annual statement full assets, taken at the figures carried by the company, are sufficient to cover the first preferred stock approximately twice over."

"THE FIRST DOMESTIC RUBBER,"

THE National Rubber Co.—not the great corporation at Bristol, Rhode Island, but a younger concern with headquarters up Harlem way in New York, is to give a "new impetus to the rubber industry" and a "new industry to the United States." This—again we quote—is "because of 'National,' the first domestic rubber."

The fact that the framers of the circular apparently know nothing of the rubber gathering that accompanied the discovery of Colorado's *Picradenia floribunda utilis* or the guayule fields of Texas and the factory at Marathon does not prove that they have nothing. It simply puts them third instead of first.

Passing over the statement that the discovery was made by a "good" American citizen, and that the company is capitalized "at the low figure of $200,000," we come to the source of supply. Still again to quote:

"The company has an unlimited supply of raw material * * * and strangely wonderful it is in the Pacific ocean, on the shores of the western boundary of the United States. It is in such abundance that it is a nuisance and the government has to pay for clearing the channels of it in order to make them navigable."

Strangely wonderful, indeed, also wonderfully strange.

"The raw material costs nothing except for hauling from the water to the factory. Unlike other rubbers, the cost of production of 'National' will be low. It is estimated that the maximum cost will be 25 cents per pound. This cost of production is unprecedented." [Planted *Castilloa*, planted *Hevea*, *Guayule* and several other rubbers cost from 20 to 25 cents a pound, so that unprecedented is not exactly the word. Why not say 'uncomprehendable?'] "The company has decided to sell this domestic rubber at not less than 60 cents per pound. * * * The company proposes to erect a plant which will produce at least a ton per day. The profit per ton would be $500 a day—or taking 300 working days in the year, the annual profit would be $150,000."

Far be it from us to discourage any attempt to add to the world's sources of rubber. Land plants are rubber producers, why not sea plants? Nevertheless the whole circular shows that the promoters are not at all versed in rubber. They doubtless believe what they state, but they should have more information to give before they offer one dollar's worth of stock to the public. If it is a proposition that is as they claim, why has not some rubber factory used the product? Who knows that even if they can produce a plastic say from sea weed that it will take up compound and vulcanize as does rubber?

The promoters are in error in so many places throughout their circular, are they not mistaken as to their product? They should have it analyzed to see whether they are producing rubber or some analogous product such as cold consommé.

* * *

Since writing the above a sample of the "National" rubber, which is the product of kelp grown on the Pacific coast, has been sent us for examination. The sample looks very much like compounded sheet, is soft and doughty and from a very brief physical examination would seem to be the kelp product mixed with rubber dough. That, however, is not assumed with any degree of finality.

DUTCH CAPITALISTS AND BANKERS HAVE SECURED CONTROL of 9,000 acres of cotton lands in Bolivar County, Miss., near Deeson. It is proposed to charter the enterprise with a capital of $500,000 or more as the Delta Farms Co., and to grow choice cotton and farm produce generally on the property, operating it as a series of ideal Southern plantations.

THE accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

Some Notes on Rubber Planting.

RUBBER PROGRESS IN THE MALAY STATES.

THE government director of agriculture in the Malay States recently sent out his report for the year 1910. It is a document that must prove most encouraging to the rubber planters in that part of the world as well as most interesting to people elsewhere interested in the progress of this industry.

The rubber output for the Federated Malay States for the year 1910 was 12,563,220 pounds, an increase of over 100 per cent. over the output of the preceding year, and nearly four times as great as that of 1908. The director makes the following exceedingly optimistic prophecy for the next five years. He estimates the increase for the present year over last at 10,000,000 pounds; the increase for 1912 at 15,000,000 pounds; for 1913, 15,000,000 pounds, and for 1914 20,000,000 pounds. He estimates in the absence of any untoward accidents that by 1916 the entire output from the Malay Peninsula will be 130,000,000 pounds on the present acreage alone, not taking into consideration the product from any new acreage.

A 30-year-old Para Tree in Singapore, Showing Tapping; Dr. Henry N. Ridley, Director of the Royal Botanical Garden of Singapore, Standing at the left.

In point of acreage there was an increase last year of 48,813 acres against an increase of 28,905 acres in 1909. The total acreage planted in rubber at the end of 1910 in the Federated Malay States was 245,774 acres, an increase of 25 per cent. over the preceding year. The director speaks of the great variation in the price of rubber during the year 1910, prices ranging in the Malay States from $2.30 to $1.14, but even at this low price there was a very consoling margin of profit, as he estimates the cost of producing rubber at 36 cents a pound.

Some very helpful suggestions are made in the report, intended primarily for rubber planters in that section, but undoubtedly of interest and probably of value to rubber planters in other parts. The matter of growing other crops on the rubber plantation during the early years of the trees is discussed in some detail. These crops are divided into two classes —catch crops and cover crops. By catch crops are meant all those crops that are planted primarily for revenue to pay or help to pay the expenses of the plantation while waiting for the rubber to mature. The principal crop of this character in the Malay States is coffee, but evidently experience has shown that these revenue producing crops are not altogether profitable, as the percentage of plantations where they are to be found was only 6 per cent. in 1910, as against 10 per cent. the preceding year. The disadvantage of these catch crops lies in the fact that when they have served their purpose they must be wholly extirpated; otherwise their roots breed root diseases which attack the rubber trees.

The only object of the cover crop is to keep out the weeds until the rubber trees are sufficiently advanced to effect this result, but experience has shown that weeding is preferable to a resort to any cover crop unless possibly one of a leguminous nature like ground-nuts, which will not only keep out the weeds, but will also bring in some revenue.

On the subject of tapping the report, in spite of the many new inventions, still recommends the simple tools, the gouge (straight or bent) and the farrier's knife, which have hitherto been in vogue. Much stress is laid upon the necessity of avoiding improper tapping, especially cutting through to the wood, and the suggestion is offered that wherever such cuts are made in the tree, that they be painted with cold coal tar not only to save the tree from the attacks of wound-fungi and borers, but also to make these instances of bad tapping conspicuous, and therefore more likely to be avoided in the future.

The report on the whole is certainly an encouraging document, and if the director's prophecy of 130,000,000 pounds of rubber for the Malay States in five years' time comes true and rubber is selling anywhere near its present price at that time the outlook for the Malay planters is indeed bright.

LARGELY INCREASED EXPORTS OF MALAY RUBBER.

Not only the aggregate exports of plantation rubber from the Federated Malay States for the first seven months of 1911, form a record as to quantity, but there has been a separate record achieved for each month. The totals for the period named during the last three years was respectively:

1909	*Pounds*	2,998,428
1910		6,248,260
1911		9,931,390

PLANTING IN SUMATRA.

It is reported that in consequence of the efforts of the General Rubber Co., of New York, to rapidly develop its recently acquired Sumatra holdings, the pay of Japanese coolies has advanced to the equivalent of $46 to $48 per head against $32 to $36 a year or two ago.

A book for rubber planters—Mr. Pearson's "What I Saw in the Tropics."

PLANTATION NOTES.

Year first shown is date of registration.

ANGLO JAVA ESTATES. Report for year ending March 31, 1911, states that the area now planted with *Hevea* at Limburg, Landen, is 5,101 acres, with approximately 554,063 trees. Tapping commenced in November, 1910, since which time the yield had been 531 pounds from the 6,638 trees tapped by end of March. Yield from the Djarangan estate, 3,018 pounds. Average cost in gold for *Hevea, Ficus* and *Castilloa* equalled 64 cents; sales averaging $1.12. Unsold stock valued at 80 cents.

SUMATRA CONSOLIDATED RUBBER ESTATES, LIMITED, Langkat, Sumatra. April, 1909, 8,000 acres. Planted area 1,972 acres, with 200,000 Pará trees. Commenced tapping June, 1911; expect 30,000 pounds dry rubber during twelve months. Capital increased to equivalent of $500,000 by creating 25,000 shares of $5 each.

SUMATRA PROPRIETARY RUBBER PLANTATIONS, LIMITED, Langkat, Sumatra. May, 1909, 4,000 acres. Planted area 827 acres, with 90,220 trees. Further acreage being cleared.

TENASSERIM HEVEA PLANTATION, LIMITED, Mergui, Lower Burma, April, 1910, 5,000 acres. Planted area 500 acres, with 193 trees per acre. Would require to raise $10,000 to $15,000 to complete clearings and start tapping. Prospect of a first-class rubber plantation. Plants have started to put out young shoots. Few, if any, vacancies, expected.

DEVITURAI RUBBER & TEA ESTATES COMPANY, LIMITED, Elpitiya, Ceylon. March, 1910, 1,902 acres. Area planted in rubber, 1,095 acres. Total crop, January to June, 1911, 33,970 pounds; January to June, 1910, 12,262 pounds.

MALANG RUBBER ESTATES, LIMITED, Java. March, 1910, 1,394 acres. Area planted in rubber, 1,080 acres. Harvested in June, 310,323 pounds of dry rubber, 15,000 trees being tapped. Plants absolutely free from disease.

PANITYA TEA AND RUBBER COMPANY, Ceylon. April, 1909, 1,028½ acres. Under cultivation, 1,028½ acres. Crop of dry rubber, January 1 to July 31, 1911, 26,170 pounds, against 8,581 pounds for corresponding period of 1910.

RANI TRAVANEORE RUBBER COMPANY, LIMITED, Travancore, Southern India. Total area, 3,504 acres, of which 2,790 acres are planted with 495,000 Pará rubber trees, averaging over five years old. Began to yield in 1910, when 41,983 pounds were produced. Crop estimate for 1911 of 145,000 pounds will be largely exceeded, returns up to July 31 being 5½ times greater than in 1910.

JERONG (PERAK) RUBBER COMPANY, LIMITED. Dry rubber secured to June 30, 1911, 147,948 pounds, against 101,140 last year. Sales to June 30 averaged $1.48½ against $2.55 in 1910.

KEPITIGALLA RUBBER ESTATES, LIMITED, Ceylon. Established April, 1906; 3,517 acres. Total area under rubber, 3,127 acres. Output for eleven months to February, 1911, 39,895 pounds. Estimated crop for 1911, 72,000 pounds. Dividends, 1910, 4½ per cent; 1909, 4 per cent.

JURU ESTATES, LIMITED, Penang, Federated Malay States. January, 1910, 2,079 acres. Area under cultivation, 1,157 acres. Trees growing well, many approaching bearing stage. Estimate for 1911, 4,470 pounds dry rubbber.

LINGGI PLANTATIONS, LIMITED, Federated Malay States. Reconstructed 1905; 10,017 acres. Area planted in rubber, 5,753 acres, with 285,000 trees, besides 450 acres being planted. Tapping carried out over 2,030 acres. Average prices realized and cost of production:

	1910.	1909.
Average price realized.....	$1.39	$1.46
Cost, f. o. b.....	$0.30½	$0.23

Quantity harvested in 1910, 878,754 pounds, against 545,219 pounds for 1909. Estimate for 1911, 1,120,000 pounds. Final dividend of 87½ per cent, for 1910, in addition to three interim dividends of 50 per cent. each. An interim dividend of 43¾ per cent. has been declared for 1911.

KIVALOE RUBBER ESTATES, LIMITED, Sumatra. February, 1910, 18,000 acres. Have planted 782 acres with 104,000 *Hevea* trees, 134 trees to acre. Will continue planting. Expect to tap in fourth year. Will plant a certain amount in coffee.

DENNISTOWN RUBBER ESTATES, LIMITED, Krian, Federated Malay States. November, 1909, 2,553 acres. Have planted 1,134 acres in rubber. Planting of reserve land to be rapidly proceeded with. Complete factory, in course of shipment to estate. Propose increasing acreage in cocoanuts. Estimated year's production, 49,500 pounds. Average equalling $1.22 gold obtained during past year for rubber.

KUALA PAHI RUBBER ESTATE, LIMITED, Kelantan, Malay States. January, 1910, 2,500 acres. Have 526 acres planted and 257 acres ready for planting. Expect funds in hand will suffice to bring estate into cultivation.

KAMPONG KUANTAN RUBBER COMPANY, LIMITED, Selangor, Federated Malay States. Original rubber company started planting 1906; 1,000 acres, all planted by 1908. Output, 1910, 6,991 pounds. Estimate for 1911, 70,000 pounds. Profit on few months' production absorbed as further capital.

JASIN (MALACCA) RUBBER ESTATES, LIMITED, Malacca Straits Settlements. May, 1910, 1,176 acres. Had planted 748 acres by January, 1911. Production for 1910, 3,460 pounds rubber; average price equalled $1.32 gold. Expect present capital will suffice to bring 1,000 acres into bearing.

JUGRA ESTATE, LIMITED, Selangor, Federated Malay States. August, 1900, 2,920 acres. Area planted in rubber, 865 acres. Production for year, 130,393 pounds, average price obtained equalling $1.55½. Final dividend of 35 per cent., making total of 60 per cent.

KLANANG PRODUCE COMPANY, LIMITED, Selangor, Federated Malay States. Established May, 1899; 2,129 acres. Area planted, 1,429 acres. Harvested in six months, ending June, 1911, 64,885 pounds, of which 37,174 pounds sold at average equivalent of $1.32½ per pound.

TANGOEL RUBBER ESTATES, LIMITED, Besoeki Resideney, Java. February, 1910, 989 acres. Area planted, 910 acres, with Pará rubber trees. Dividend expected for year 1911-12. No fresh capital required.

PANAGULA RUBBER COMPANY, LIMITED, Ceylon. July, 1910, 835 acres. Area planted by original Ceylon company, 835 acres. Output in 1910, 34,792 pounds, from which an average equalling $1.34 was realized. Estimate for 1911, 70,000 pounds. New factory required for Ethelijadoda Estate. Chairman now in the East will visit property.

LONDON SUMATRA RUBBER AND PRODUCE ESTATES, LIMITED, Sumatra. December, 1909, 7,533 acres. Area planted, 1,538 acres. Estimated crops 1911, 3,000 pounds; 1912, 16,000 pounds. Arranging debenture issue to provide funds required for further development.

CICELY RUBBER ESTATES COMPANY. The sixth annual report of this company shows a net profit on a paid-up capital of £16,000, of £36,941, enabling the directors to pay a dividend for the year of 205 per cent. on the preference and 200 per cent. on the ordinary shares, leaving £4,090 to be carried forward, after carrying £6,000 to a special reserve. The year's rubber harvest was 170,700 pounds, which cost 1s. 2½d. per pound and sold at a net average of 5s. 7¾d. per pound. The company has 829 acres planted to rubber near Teluk Anson, Lower Perak, Federated Malay States.

RUBBER CULTURE AT FORMOSA.

Owing to the favorable prospects resulting from the experiments in rubber planting, made by the authorities at Formosa, further efforts in that direction are contemplated. Mr. T. Kawakami, who discovered the existence of rubber trees at Formosa, has been sent to the Straits Settlements, Borneo, and other tropical districts where rubber is grown, for the purpose of inspecting the condition of rubber planting at those points, and gathering information on the subject.

"CASTILLOA" CULTURE IN JAVA.

SEVEN years ago there were on the various plantations in Java 119,285 *Castilloa* trees while at the same time there were only 24,023 *Hevea* trees. Since that time, however, the planting of *Hevea* has increased with great rapidity until at the close of 1910 the *Hevea* trees in Java numbered 1,395,999. The planting of *Castilloa* on the contrary has shown a number of fluctuations, some years increasing and some decreasing while the number of trees planted last year was only 24,872 and the total number of *Castilloa* trees in Java at the close of 1910 was 388,862 or not much more than one-third of the *Hevea* trees.

Notwithstanding the obviously greater popularity of the *Hevea*, owing to its lower percentage of resin and its greater yield under favorable conditions, the *Castilloa* has some advantages which the Java planters have come to recognize; namely, it can be grown at an altitude where the *Hevea* will not flourish, and it is more suited for planting in conjunction with other growths as it is practically self-pruning. While the *Castilloa* tree can be grown successfully at an altitude that would be distinctly unfavorable to the growth of the *Hevea* it does better and comes to a yielding condition earlier when planted at a lower altitude.

In the general report for 1910 prepared by the Netherlands East India Committee there is a very interesting paper by Fr. Gierlings, who has had an extensive experience in the planting of *Castilloa* at Kediri, in Southern Java. He finds that the culture of *Castilloa* is easy where one has perfectly fresh seed, seed older than three weeks giving but unsatisfactory results. He has noticed that in wet years the *Castilloa* in Java blossoms twice in a year, the first seed, which ripens in August or September, giving but poor returns for planting. The second seed, which becomes ripe in December or January gives much more satisfactory results. He and neighboring planters have tried many experiments in *Castilloa* planting and have finally adopted the plan of making their plantings 12 feet apart in an easterly and westerly direction and 24 feet apart from north to south in closely grown coffee gardens. In this way they get about 100 trees to the acre. For the first two years the trees apart from the coffee trees grow more rapidly, but after the *Castilloa* among the coffee trees has risen above the coffee its growth is more rapid than that of the trees in the open.

"CASTILLOA" PLANTED 1901, SHADING COFFEE.

While there are many complaints in other places in regard to diseases and insect ravages the *Castilloa* of Java appears to be practically free from these pests and even where the bark has rotted because of careless tapping and considerable surface of wood is exposed, the trees still appear to be fairly immune from insects.

Mr. Gierlings has devoted a great deal of time to experiments in tapping. His latest method, tried last year, has given the best results and it is well worthy of a brief description. His method is as follows:

With a knife like that shown in the illustration, and which is made by the native blacksmiths, horizontal incisions are made beginning about one foot from the ground and going around one-quarter of the circumference of the tree. These incisions are made about three inches apart, being cut half an inch deep, or down to the cambium, and are continued until there are 50 of them, reaching to the height of 13 feet. The same operation is repeated on the next quarter of the tree, beginning at the top and working down, but a narrow strip of bark about one inch in width is left between these two series of horizontal cuts. The accompanying diagram shows the general appearance of the tree after the incisions are made.

After a rest of three months the other half of the tree is tapped in the same way and three months later the operation is repeated on the first half of the tree, the incisions, however, being made about half an inch below the original cuts. As the tree is allowed to lie idle during the three months' flowering season, it is tapped only three times a year. This method of tapping produces about eight ounces of dry rubber a year from trees eight to nine years old.

The latex exuding from these incisions is in the form of a soft mass. With every tapper is a woman, whose duty it is to collect the latex. Her equipment consists of a large bamboo pot, a small bamboo pot, a spoon and some bamboo spatules. The large pot is equipped with a sharp point at the bottom so that it can be stuck into the ground. Both this and the small bamboo pot, which she carries with her, are partly filled with water. She mounts a ladder to the uppermost incision and works her way down the tree scraping the latex with the bamboo spatule into the spoon and pouring it into the small pot, which when full is emptied into the larger one. The contents of the larger pots are collected by men and carried to the factory where the latex is passed through a coarse sieve and then diluted with water, and passed through a finer sieve into a washing vat, usually made of galvanized iron and holding from 25 to 75 gallons. After the liquid has settled the rubber globules come to the surface and the remainder of the liquid is drained off through an outlet at the bottom. Fresh water is then poured into the vat, the mixture stirred and allowed to settle, and again drained off. This is repeated until the latex looks pure, which generally requires three or four washings. The washing of the latex is usually completed the day it is gathered.

The latex is then coagulated in round enamelled pans. About a pint of latex is poured into each pan together with one-third of an ounce of a 40 per cent. solution of formaline, the two being well stirred together. In the meantime a boiler of water has been heated containing about one gram of 98 per cent. acetic acid per quart of water. When the water is close to the boiling point three-quarters of a quart is poured into each pan of the latex. In this way the latex is heated to from 150 degrees to 160 degrees Fahr. and immediately coagulates and floats on the top of the water in spongy cakes. These cakes are pressed together and the water poured out but is saved and the latex it contains secured later. The coagulated cakes are immediately rolled into thin sheets. These are placed again in vats with clean water to which a very little formaline has been added and allowed to remain there for a few hours and then removed to the smoking and drying house, a building with perforated iron floor, on which drying racks are placed.

KNIFE FOR TAPPING *Castilloa.*

The temperature in the smoking house is kept at about 110 degrees Fahr. and a dense smoke is developed by means of burning damp grass. The sheets of rubber remain in this smoke house for two or three days and get about one-half dry. They are then pressed into small squares weighing about 3½ pounds. These are placed in another formaline solution for a shorter time and then taken again to the smoking house for a final drying. The rubber is allowed to retain about 5 per cent. of water when it is shipped, experience showing that it dries out on the way and that it keeps much better. The square blocks are packed in smooth finished cases made expressly for them.

Regarding the cost price of rubber nothing absolutely definite, in Mr. Gierling's opinion, can be said as so much depends upon wages and weather. He found that 1909 with a small yield per tree but with generally favorable weather and low tapping expenses his rubber cost him when put on board the steamer at Sourabaya about 16 cents per pound. The following year with a larger yield per tree but with very unfavorable weather and higher wages for tapping his rubber cost him 23 cents per pound, averaging about 20 cents a pound for the two years.

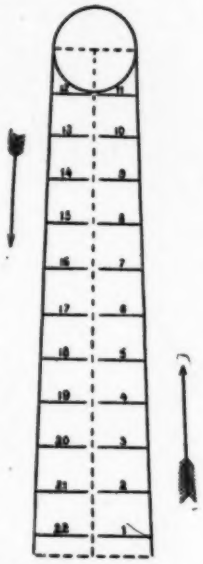


DIAGRAM SHOWING *Castilloa* TAPPING.

THE LIFE OF TAXICAB TIRES.

IN a report of the Vienna Chamber of Commerce, an interesting calculation is quoted as to the consumption of rubber involved by the extension of taxicabs. The distance covered every day by a "taximeter" is estimated as about 60 miles, making on the basis of 250 working days, about 15,000 miles a year. The life of a set of tires being from 4,000 to 6,000 miles, this rate of wear representing for each cab three to four sets a year. At 45 pounds a set, the annual consumption per cab would equal 135 to 180 pounds of rubber.

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.

RUBBER AND BALATA NOTES FROM BRITISH GUIANA.

(By Our Special Correspondent.)

ONE of the more recent New York rubber importers, in order to be sure of a supply of balata, has acquired numerous grants within a year, and is now shipping by each outgoing steamer two or more tons of sheet balata. It might be added, at this juncture, that American importers or brokers, as a whole, have not gone into rubber culture (with the possible exception of Central America), whereas American manufacturers are planting or contemplating planting both in British Guiana and the Far East.

There is a royalty of 2 cents a pound both on rubber and balata, but it is well to mention that on the latter there is also an export duty of 2 cents a pound imposed only this year. In other words 4 cents is collected by the Government on each pound of balata leaving the colony.

Considering the heavy yield of a balata tree and the vast areas of Crown Land given over to the licensees at a small fee, there should be no cause for complaint.

On the other hand on account of the disappointing yield of the wild and cultivated Sapium rubber trees, the suggestion of an American planter, that some assurance be given that no future export duty should be imposed on rubber, is certainly within the bounds of reason. In fact it is believed if the present royalty of 2 cents per pound on rubber were abolished the colony would benefit thereby. Certainly Ceylon is prosperous enough without a duty on rubber and why not encourage capital into such a favored spot as this?

That British Guiana has carried off the prize at the Rubber Exposition for the best cultivated rubber (and of the Pará variety) in the West Indies, is cause for continual rejoicing by rubber men and by the local press. It is to be hoped that American magazine writers will please take notice that growing Pará rubber has passed the doubtful stage in British Guiana.

The labor question is causing some of the newer English companies engaged in balata production some anxiety. The negro balata bleeders have been absconding with money advances and with supplies more than ever before. The laborer argues that some of the land has no balata trees and he cannot remain way back in the bush and starve. It is whispered cautiously that some of the balata companies floated at the height of the boom were saddled by local promoters with poor grants. The old time merchants, it is said, are still holding the best balata land and making money.

There is no complaint with the coolies on the rubber plantations, which are progressing as fast as seeds are obtainable.

There has been an association of balata companies formed to try to correct the absconding "nigger" bleeders. On account of the troubles this year with balata bleeders the output will be short.

RETIREMENT OF SIR F. HODGSON.

More than the merely formal appreciation of his services is being expressed in regard to the impending expiry of Sir Frederic Hodgson's term of office as Governor of British Guiana. During the past seven years he has succeeded in freeing the colony of the floating debt under which it had been struggling, and which at one time amounted to upwards of $800,000. In pursuance of his policy of encouraging the people to take to the land, a Government Committee over which he presided, recently decided to recommend the establishment of agricultural loan banks or co-operative credit institutions.

Under his administration, sugar has continued the chief industry of the country, while the export of diamonds is regaining its old position and is making up for the decline in shipments of gold. Balata and rubber have made considerable progress; the railway survey made last year having been intended to promote these and other industries, by a knowledge of the resources

of the interior and by accurate estimates of the cost attending construction.

THE LABOR COMMISSION REPORT.

While it avowedly does not furnish a complete reply to the problems it was expected to solve, the report of the Labor Commission quotes the opinion generally entertained, that the class of laborer most suited to the present needs of the colony is the East Indian. In default of a sufficient number of recruits being available, then the alternative of Javanese or West Indian labor is referred to.

The report is signed by Messrs. Robert Duff, chairman; J. B. Harrison, A. P. Bugle, Jules Pairaudeau, J. Louis Walton, R. H. Lyndon Kerr, James Winter, James Andrew, and J. W. Downer.

RESULTS AND PROSPECTS OF BALATA INDUSTRY.

In commenting upon the figures quoted in the India Rubber World of September, 1911 (page 485), a writer in a London financial journal remarks that as the whole balata producing area of the colony has not yet been exploited, there is still plenty of room for the development of this valuable economic asset. Balata, it is added, commands its own market (and its own price) quite independently of rubber conditions. For many commercial purposes it is an essential requirement for which no substitute is known. In further illustration of this point, the writer adds:

"Nature has already provided the balata forests in lavish profusion; no planting has to be done, and no expense whatever is incurred for 'upkeep.' The position is or should be entirely governed by good management on the spot. * * * The position of balata today is impregnable and, moreover, is free from most of the drawbacks to which rubber is subject. * * * Balata can afford to smile, and smile again, while rubber sulks in a fit of acute indigestion. You can grow tappable rubber in five short years. But you cannot grow tappable balata under thirty years. *Voilà le grand secret.*"

VENEZUELAN BALATA IN BRITISH GUIANA.

With reference to the proposal which has been under investigation by the Colonial Government, of repealing the law prohibiting the importation of balata from Venezuela, a statement of Señor Monagas, the local Venezuelan Consul, is quoted by the Georgetown *Daily Argosy*. It is to the following effect:

"Not only are Venezuelans willing to pay the equivalent of the royalty duty imposed on locally-obtained balata and the export duty, but they are quite agreeable to paying any other reasonable duty which the Government of this colony may impose. In fact, the man who first applied to Sir Frederic Hodgson for permission to pass his balata *via* this colony offered to make a deposit of $10,000 for the privilege, but this offer was not accepted in view of the law that obtains at present."

It is understood that this question forms one of those to be treated by the Commission of Inquiry into the balata industry, the appointment of which has recently been advocated by a deputation from the Balata Association, which waited upon the Acting Governor.

WORK AT THE GOVERNMENT INDUSTRIAL FARM.

According to the report of the Government Industrial Farm at Onderneeming for the school year 1910-11, the experimental cultivation of Pará rubber (*Hevea brasiliensis*) has been considerably extended during the year, seedlings having been planted throughout the coffee fields.

Under instructions from the Director of Science and Agriculture the experimental tapping of five Pará rubber trees was commenced towards the close of the year, the half-herring bone system, covering one-quarter of the girth, being employed. The trees are being tapped on alternate mornings and a careful record of the yield is being kept.

Other varieties of rubber trees which are being experimented with at the station include *Sapium Jenmani, Funtumia Elastica* (West African rubber) and *Castilloa Elastica* (Central American rubber). The *Sapium Jenmani* plants are making particularly fast and vigorous growth—the *Funtumias* are growing slowly but appear healthy and vigorous, while the *Castilloa Elastica* trees must be reported as having failed.

"CEARA" RUBBER IN THE BRITISH GUIANA HINTERLAND.

One of the most competent authorities on the rubber and balata industries of British Guiana is Mr. John Ogilvie, in charge of the balata grants belonging to Messrs. Garnett & Co., Ltd., and who has recently declined the appointment of local manager offered him by the Amsterdam Balata Company. In a recent interview with a representative of the Georgetown *Daily Argosy* he spoke as follows with regard to *Ceara* rubber:

"Some experiments are being carried out in various parts of the hinterland with *Ceara* rubber. The trees I have planted are doing fairly well, though my experience has taught me that rubber trees will not grow in the savannah unless the ground is carefully prepared. Some of the trees planted by me have attained a good height and are 22 inches in girth, though on July 25, 1909, when I photographed them first, they were just tiny saplings. They are going to yield in a satisfactory way, tapping experiments already carried out having convinced me thoroughly of that."

INCORPORATION OF SANTOS DE CAIROS & CO., LTD.

Advices from Georgetown report that the business of Messrs. De Cairos Bros. & Co. has been incorporated and formally registered unded the Companies' Ordinance. The style of the new company, which has a capital of $180,000, is Santos, De Cairos & Co., Ltd.

FLUCTUATIONS IN BALATA PRICES.

The following are recorded fluctuations in the prices of block and sheet balata of fair average quality:

Block Balata (Cents per pound).

	Lowest.	Highest.	Average.
1909	42 cents	60 cents	51 cents
1910	58 "	96 "	77 "
1911	56 "	68 "	62 "

Sheet Balata (Cents per pound).

1909	54 cents	62 cents	58 cents
1910	59 "	$1.16	88 "
1911	76 "	88 "	82 "

Consumption is said to have increased in America, particularly in sheet balata for use in cable manufacturing.

On the Action of Chromyl Chloride on India Rubber, by D. Spence and J. C. Galletly. This preliminary communication, after referring to the well-known reactivity of rubber towards sulphur chloride, deals with the action on rubber of chromyl chloride. In their researches, the authors investigated the action of chromyl chloride on rubbers of different botanical origin, finding that in every case the substance reacts with india rubber to form a perfectly definite compound.

Among the experimental features dealt with are, preparation of the chromyl compound, decomposition of the chromyl chloride derivative of rubber by water, production of an aldehyde and decomposition by dialysis. The authors state they are now engaged in isolating the aldehyde and the insoluble chromium, with a view to further investigation.

A book for everybody interested in tires—Rubber Tires and All About Them"—this office.

RUBBER IN THE REPUBLIC OF HONDURAS.

THE growing importance of Honduras as a source of rubber production is demonstrated by the figures of the United States imports from that country.

Fiscal years.	Pounds.	Value.
1906	93,126	$55,709
1907	104,334	76,444
1908	102,010	65,865
1909	76,133	39,985
1910	148,813	117,808

Honduras has an area of 45,000 square miles, while the population, is believed to exceed 600,000.

The temperature varies in the highlands between 41 degs. F. and 59 degs. F., while in the valleys and on the coasts it never exceeds 86 degs. F. The great fertility of the land, due to the richness of the soil and to the abundance of water, renders cultivation profitable.

The total imports of the republic for the fiscal year 1908-9 equalled in gold $2,581,553, and the exports $1,990,601; the share of the United States being respectively $1,769,876 and $1,834,565.

Under the laws of Honduras the acquisition of all kinds of property is extremely easy, and its disposal absolutely free from restrictions. The government also grants agricultural lands free from taxes, these lands being deeded after due cultivation to the receivers of the concessions. All machinery and utensils for any industry are exempt from custom duties and other taxes.

At the recent Pan-American Commercial Conference, Mr. Guillermo Moncada, Consul-General of Honduras in New York, called attention to the fact of Honduras being completely unexplored, and urged that its virgin lands, adequate for any cultivation, well provided with water, and extremely fertile, offer great advantages for the investment of capital.

According to an official consular report from Ceiba, a private company, organized last year in Honduras, obtained title to 3,000 acres of virgin land peculiarly adapted to the cultivation of rubber, and has been planting on a large scale. It is said to be the intention of this company to prepare an additional area sufficient to cultivate several hundred thousand trees, transplanting them from extensive nurseries as the land is prepared. The report adds that there is no cultivated rubber now produced in that locality, but that the demand for the wild "scrap" rubber which thrives profusely and is gathered by the Indians, had resulted in the local price advancing from 38 cents to $1.33 gold per pound.

The illustrations herewith show progress at the plantation "Boca Viejo." The trees under cultivation are *Castilloas*, and are growing wonderfully. The adjacent lands have also many wild *Castilloas* which the owners of the plantation are tapping.

Collecting Latex in Bags Instead of Cups.

Castilloa Biscuit Coagulated With Amole.

Pressing Freshly Coagulated Rubber.

Drying Rubber.

THE FUTURE OF GUAYULE.

"GUAYULE GUM," as it is officially called, has appeared in the United States statistics since 1909, among the "Imports for Consumption," though it is for the first time separately shown in the "Imports of Merchandise" for the fiscal year ending June 30, 1911. Grouping the two returns, the following result is obtained:

UNITED STATES IMPORTS.

Guayule.

Fiscal years to June 30.	Pounds.	Value.	Average per lb.
1909.....	10,096,549	$3,186,376	$.315
1910.....	19,768,424	8,951,441	.452
1911.....	19,749,522	10,443,157	.530

Other India-rubber.

Fiscal years to June 30.	Pounds.	Value.	Average per lb.
1909.....	79,183,245	$58,451,500	$.739
1910.....	79,411,844	91,419,990	1.150
1911.....	72,046,260	77,204,603	1.071

Thus in 1910 and again in 1911, the imports of guayule gum were almost double those for 1909; the average price meanwhile increasing from 31½ to respectively 45 and 53 cents; equalling a total advance of almost 70 per cent., while the average advance for other descriptions of india-rubber has only represented about 45 per cent., for 1911 as compared with 1909.

The enhanced importance thus demonstrated of guayule, as an element in future rubber supplies, gives special interest to the work on the subject, by Dr. Francis Ernest Lloyd,* briefly reviewed in the September issue of THE INDIA RUBBER WORLD.

PROPERTIES OF GUAYULE.

When some time ago it became more generally known that the guayule plant, which grew in abundance in the desert country of northern Mexico, contained an economically valuable amount of rubber, investigations of a minute character resulted in the discovery of the fact, that guayule yields about 10 per cent. of its weight, of "bone dry" marketable rubber.

In 1888 a quantity of 100,000 pounds of the entire shrub was shipped to New York, apparently under some misunderstanding of instructions. Although freight had of course to be paid on the wood, and the commercial result was thus evidently unsatisfactory, the yield of 18 per cent. of rubber, the quality of which was described as equal to the best grade of Centrals, was regarded as a proof of the industrial value of the plant. Its treatment in Mexico itself was evidently necessary, and in 1901 that industry was started on a small scale by German experts who had settled in that country.

GUAYULE A COMMERCIAL SUCCESS.

The beginning of commercial success in the extraction of rubber from the guayule shrub by the mechanical method, dates from the building about 1905 of a large factory at Torreon by the Continental-Mexican Rubber Company, where the results of earlier experiments were utilized and further developed. From that time forward considerable capital (chiefly American) was invested in the new industry, extracting plants having been established at San Luis Potosi, Saltillo, Monterey and Gomez Palacio, as well as at Torreon and Jimulco.

EARLIER MEXICAN EXPORTS OF GUAYULE.

As shown by the United States statistics already quoted, the imports of guayule gum in the fiscal year 1909 amounted to about 10,000,000 pounds. Dr. Lloyd's estimate of the total Mexican exports for the four fiscal years ending June 30, 1909, is 20,000 tons, or 40,000,000 pounds, of which he states 80 per cent. went to the United States; the last-named quantity corresponding approximately with the American figures of 1909.

YIELD OF GUAYULE.

It is at this point that Dr. Lloyd's reference to the amount of guayule rubber exported, renders specially interesting the connection he establishes between the quantity of rubber produced and the estimated supply of guayule shrub. On the basis of a 7 per cent. yield these 20,000 tons of rubber exported in the four years ending June, 1909, would have represented 286,000 tons of guayule shrub. As, however, the yield was in some cases higher, Dr. Lloyd considers 225,000 tons of guayule shrub as representing the quantity disposed of up to June, 1909. The American imports of guayule for each of the years 1910 and 1911 having been double those of 1909, it is evident as much shrub was consumed in their manufacture during the last two years as had been used in the preceding four years.

This difference has to some extent been compensated by the increased rate of yield now being attained, of 12 per cent., as compared with 9 per cent., on which is based the above named estimate of 225,000 tons of guayule shrub as having been consumed within the four years—1905-1909. On the higher basis of 12 per cent. yield, the 10,000 tons imported by the United States in the fiscal year 1910 will have represented about 83,300 tons of shrub used during that period. Assuming that other countries will have continued to take one-fourth of the quantity imported by the United States, there would be:

For four years, 1905-1909, total about.....	225,000 tons
For two years, 1910-1911, total about.....	200,000 "
Estimated consumption of shrub in six years....	425,000 "

Three questions present themselves for discussion:

1. What proportion does the above-named consumption bear to estimated supply of guayule?
2. What steps are being taken to renew the supply?
3. What improved methods are likely to increase the yield and consequently reduce the quantity of guayule shrub consumed.

THE SUPPLY OF GUAYULE SHRUB.

According to Endlich's estimate quoted by Dr. Lloyd, the original quanity of guayule shrub represented 375,000 tons; this figure being based on a yield in virgin fields of half a ton per hectare (2.47 acres) from 750,000 hectares, at which the shrub-bearing area in Mexico was estimated. This shrub-bearing area represents 10 per cent. of the 7,500,000 hectares which the general Mexican guayule region was calculated to contain.

Dr. Lloyd allowing for the guayule still remaining on fields which had been gone over, places the original quantity (instead of 375,000 tons) at 500,000 tons; of which it would seem that four-fifths had been used up to the present time.

CULTIVATION OF GUAYULE.

FORESTAL OPERATIONS.

The operations in the cultivation of guayule may be either forestal or cultural, in the narrower sense. Field operations have up to the present been mainly confined to the collection of shrub in the greatest possible quantity, and in the easiest way, for the sake of the immediate monetary return. The small plants left for this reason in many places will, it is remarked, serve to repopulate the areas thus treated. Pulling up the plant by hand has been the method usually employed, while had it been cut or twisted off (as has been done in some cases), the ground would in time display a replenished product.

It is recommended at the first cutting to take only plants 16 inches or more in height. Five years later there should normally be a new crop of 16-inch plants, which may then be taken. Between 12 and 16 inches the maximum economic efficiency of

*Guayule, a Rubber-Plant of the Chihuahuan Desert. By Francis Ernest Lloyd. 1911.

growth is reached. Fifteen years is regarded as the "rotation period," but it is added, as the growth efficiency of a plant falls after this age, these plants must be removed every fifth year.

With the view of their practical use, Dr. Lloyd has embodied the above and other points into "Suggested Rules of Practice," which deal with the questions of the period of harvesting, reseeding barren ground, and other topics of importance. In closing this branch of the subject, Dr. Lloyd emphasizes the fact that the disregard of these rules of operation, or of other equally or more efficient, will lead to the practical extermination of the plant.

CULTURAL OPERATIONS.

As Dr. Lloyd remarks, while forestal operations are of immediate and great importance for the preservation of the natural supply as long as possible, the ultimate and adequate solution of the production of guayule shrub lies in its successful cultivation. The abundant and ready growth of guayule under irrigation (properly alternated with drought) is an established fact. It remains to be shown, on a larger scale, what may be done to establish the culture of the plant on an economic basis. The great difficulty of the initial work is the question of water, without a proper supply of which it would be useless to attempt cultural operations.

GROWING SEEDLINGS.

Under present conditions it would be necessary to collect seed from the field, which is a costly and uncertain method; this point being of importance in the event of its being found desirable to raise and transplant seedlings.

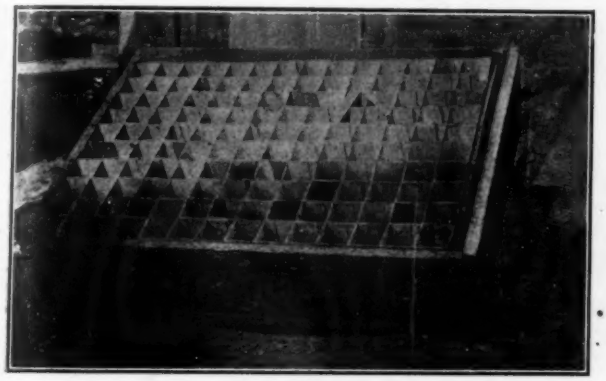


FIG. B. BOX CONTAINING TUBES FOR GERMINATING GUAYULE SEEDS.

With a view to eliminating the risk of loss in transporting seedlings, a tropical principle was adopted. A unit system of wooden trays and paper tubes was devised by Capt. L. C. Andrews, the tubes being four square inches in transverse section and six inches long. A tray 20 x 28 inches inside measure and six inches deep, was equipped with these tubes (Fig. B), the whole being filled with unsifted limestone soil. The tray placed in a "melga" was watered by sub-irrigation, while the surface was shaded at a height of 1.6 inch by a thin cotton cloth supported in a frame. On February 16, 1908 1.5 ounce of seed was sown. The germinations numbered 525, of which 41 were lost, leaving 484 living seedlings. Of the 525 germinations, 104 had taken place by the end of February, 300 more by March 8, a further 100 by March 12, and the balance by March 16. The appearance of these seedlings is shown in Fig. D. When ready for placing in the grove the whole pot is planted; the decay of that receptacle, aided by the fracture, setting the roots free, without any disturbance. These changes will have more or less taken place by the time it is desired to transplant the seedlings.

Seeds germinate more promptly and seedlings grow much more rapidly during the summer months.

IRRIGATION.

Hand-watering of the surfaces would, it is remarked prove laborious and expensive. In sub-irrigated trays, the germination was over twice that in surface-watered trays; sub-irrigation with shade being the most favorable system.

TRANSPLANTING FIELD PLANTS.

Another method of cultivation described by Dr. Lloyd, as having the advantage of speed, is the transplanting of field plants into irrigated ground. From experience it has been found that the best method is to cut back to the top of the tap-root and send the tops to the factory for extraction; the returns from which would go far towards the expense of operations.

PROSPECTS OF GUAYULE.

Dr. Lloyd's conclusions touch upon two questions of importance —first, that up to the present time, the facts have not warranted cultural trials on a scale sufficient to make available a crop of anything but limited experimental size; and, second, that such cultivation may be supplemented *ad libitum*, provided that areas with sufficient water are available, and that care is exercised in harvesting their yield.

In connection with the latter branch of the subject, Dr. Lloyd suggests that the new growths (say, of two years) of plants about 40 inches spread, may with advantage be removed by a cutting instrument, so as to leave the butt undisturbed to shoot out afresh. The branches which have rooted, can then be removed by hand, simply by breaking them away, and replanted. These are usually supplied with a strong root which can be pulled up without severe damage.

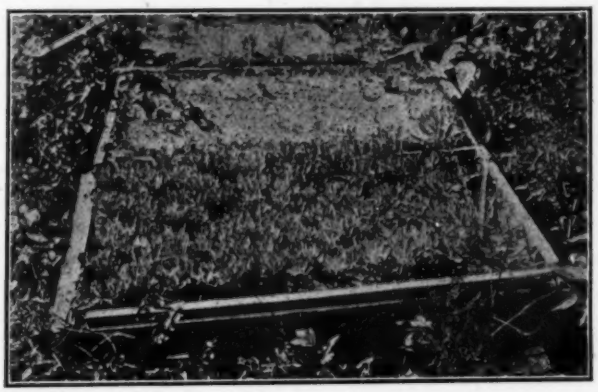


FIG. D. THE SAME BOX CONTAINING SEEDLINGS WELL GROWN.

Dr. Lloyd's treatment of his subject is remarkably practical and detailed, indicating his thorough acquaintance with its various aspects.

ANOTHER PROOF OF RUBBER'S COMMERCIAL POSITION.

It appears that an industrious junk-dealer of Paterson, New Jersey, has been busy for some time past making a collection of worn-out rubber goods. This collection he put in his storehouse with his other treasures. A few days ago thinking that he had rubber enough to take to the reclaiming market, he visited his storehouse with the intention of packing it up and making delivery. To his consternation he discovered that the window had been broken and that while nothing else had been touched in his storehouse his rubber was gone, to the last scrap. Suspicion fell upon a rival junk-dealer, whom he immediately haled before a justice of the peace, who in turn passed the matter along to the grand jury. The larceny of the rubber, together with the immunity enjoyed by the rest of the dealer's collection, shows that among junk, rubber is now in a class by itself. The Paterson dealer should secure proper quarters in a safety deposit institution.

THE OBITUARY RECORD.

JAMES H. STEARNS, treasurer of Parker, Stearns & Co., died on September 9, at the Pine Grove Springs Hotel, Spofford, New Hampshire. He was born in Brattleboro, Vermont, 69 years ago. In addition to his interests in the firm of which he was treasurer, he was president of the Pine Grove Springs Company. He was a member of the Union League Club, Brooklyn; the Veterans' Association of the Twenty-third Regiment, and the Empire State Society of Sons of the American Revolution.

Mr. Stearns is survived by a widow, one son, E. Ward Stearns, who was associated with him in business, and one daughter Miss Edna Stearns.

JAMES H. STEARNS.

The funeral services were held on Tuesday, September 12, in the family's summer home in Spofford, the Reverend Mr. Watson, of the Universalist Church, officiating. There was a very large attendance at the services, not only of the people of Spofford but of friends from Brattleboro, Mr. Stearn's birthplace and from the neighboring towns of Keene, Hinsdale, Westmoreland and Chesterfield, while many of his old friends from Boston, New York and Brooklyn were also present. A large part of those who attended the services, especially the residents of the village where he had spent so many summers, followed the body the entire distance, a mile and a half, from the church to the cemetery.

Mr. Stearns was a large man, quiet in his tastes and ways; not much of a talker, but a very clear and sane thinker. He was naturally friendly, especially towards young men in whose careers he took a deep but unobstrusive interest. Nearly twenty years ago he was warned by physicians that his span of life was to be but brief, but by a temperate out-of-door life, he not only greatly prolonged his days but was most comfortable and happy in so doing.

The trio who made up the firm of Parker, Stearns & Sutton were of a type that is unusual among American business men. They were exceedingly well adapted for co-operative effort—one clear-headed, unemotional, with an intuitive knowledge of just how and where to find markets for almost any products, another a thoroughly capable and successful factory manager, and the third an impulsive, brilliant inventor. Their beginnings were small, but as the business grew and became profitable they developed their unusualness. Instead of allowing the business to absorb the whole of their lives and be master, they secured competent assistants, and selecting a section in New Hampshire bought all of the land that enclosed a beautiful lake. There they built summer homes, and lived in the open for four or five and often six months of the year. Messrs. Parker and Sutton were content with elegant villas surrounded with fine grounds, with motor boats, horses and automobiles. Mr. Stearns, however, enamored with the lake and mountain scenery, wanted the whole world to share it with him, and erected a great summer hotel which his many New York friends were glad to flee to during the hot months. With it all the three took infinite comfort, and no doubt added to their years notably by their wise living. Mr. Sutton passed away September 23, 1908. Henry Burton, their chief assistant, adviser and friend died May 10, 1910, and now another has gone. To the remaining partner bereft of his life-long associates and friends, lonely and stricken, the deep sympathy of the whole industry is extended.

JAMES F. CUSACK.

James F. Cusack, superintendent of the Plymouth Rubber Company, Canton, Mass., died suddenly on September 4 while visiting his father at East Manchester, New Hampshire. He was born 38 years ago in Manchester, New Hampshire, but had lived during the last 11 years in Stoughton, Massachusetts.

CHARLES E. YOUNG.

Charles E. Young, who for the last 15 years was manager of the rubber department of the jobbing house of L. P. Ross, Rochester, died September 12, after a protracted illness resulting from ptomaine poisoning. Mr. Young was born in Watertown, N. Y., November 20, 1857. He was not only widely known in rubber footwear circles in the Middle States, but was very active in many enterprises outside of his business—particularly in church affairs in Rochester, being at the time of his death superintendent of the First Baptist Church Sunday School. He was a man of unusual ability and of fine character.

EXPORTS OF RUBBER GOODS TRIPLED IN TEN YEARS.

BY comparing the figures shown in the September issue of THE INDIA RUBBER WORLD [page 504], it will be seen that within the last ten years the exports of belting, packing and hose were more than tripled, those of rubber boots and shoes more than doubled and those of all other rubber manufactures almost quadrupled, the aggregate results being:

1901-02	$3,462,402
1910-11	10,947,248

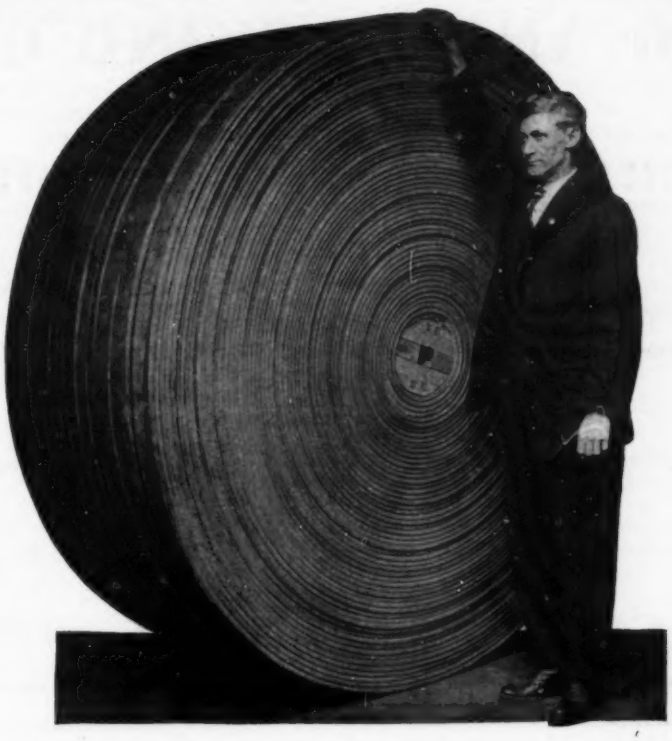
That the annual totals show a steady increase year by year affords convincing proof that this progress is not caused by "dumping" American goods in foreign markets, with the consequent reaction, but indicates a growing appreciation in all parts of the world of those intrinsic merits upon which American rubber manufacturers have built up and held their trade.

According to the latest details available (those for 1909-10), there had been during that period a marked development of business with the Australian markets, as compared with 1908-09, shown by annexed figures:

AMERICAN EXPORTS OF RUBBER MANUFACTURES TO AUSTRALIA AND NEW ZEALAND.

	1908-09.	1909-10.
Belting, hose and packing	$98,171	$148,687
Boots and shoes	173,450	205,567
All other rubber goods	120,357	168,395
Total	$391,978	$522,649

One important feature of the Australian trade being that the seasons are inverted as compared with this country, this fact would enable manufacturers to follow up their campaigns here, with others at the Antipodes. Of course preparations for the latter would have to be made ahead, but the prospect of thus getting extra trade just when it is most needed, should encourage American manufacturers to try for their share of business with the Australian markets.



GOODRICH CONVEYOR BELT

A REPRESENTATIVE product and in keeping with the Goodrich principles of reliability and fair dealing. Long years of experience have enabled us to develop the particular quality to form a reliable and economical belt, and both manufacture and selling are guided by an intimate experience of belt conveyor practice.

THE B.F. GOODRICH CO.

AKRON, OHIO, U.S.A.

NEW YORK BELTING AND PACKING CO., Ltd.

MANUFACTURERS OF A COMPLETE LINE OF HIGH GRADE

MECHANICAL RUBBER GOODS

Including Cobb's Piston & Valve Rod Packing, Indestructible White Sheet Packing Vulcan High Pressure Spiral Packing, "1846" Para Rubber Belting, Magic Garden Hose, Air Brake, Air Drill, Steam, Suction, Water Hose, etc.

Original Manufacturers of Interlocking Rubber Tiling.

Nos. 91-93 CHAMBERS STREET, NEW YORK

ECCE SIGNUM.

THOROUGHLY RELIABLE.

The policy of furnishing only the finest goods that can be produced with perfect materials, latest and best machinery, and highly skilled workmen of long experience, has been, is now, and will continue to be, the policy of

The Mechanical Rubber Company,

CHICAGO, ILL.

Branch Store, No. 1810 Blake Street, Denver, Colo., where we carry a full line of goods.

Manufacturers of all kinds of rubber goods for mechanical uses—Hose, Belting, Packing, Gaskets, Bicycle Tires, Specialties, Moulded Goods, Etc., Etc.

If you are unable to satisfy your trade with goods you are supplying,
If you are in search of good goods at fair prices,
If you cannot get quick deliveries,
If you are not getting fair value for your money,
IN ANY EVENT,

SEND TO US FOR SAMPLES AND QUOTATIONS. . . . .
WE CAN SUIT YOU EVERY WAY.

FACTORY, GRAND AVE. & ROCKWELL STS

THE MECHANICAL RUBBER CO., 230 Randolph St., Chicago, Ill.

Rubber Testing at Gross-Lichterfelde.

WHILE in German technical circles there no longer exists any doubt with regard to the value of the mechanical testing of rubber, there seems to be a conflict of opinion as to the manner in which such tests should be carried out. To this circumstance has been attributed the lack of their general recognition and application.

Much attention has been paid to the subject during the last few years.

WORK OF 1909.

The testing of india-rubber and insulating materials electrically, constructionally and thermally, was taken up at the Testing Bureau of Gross-Lichterfelde, Germany, during the working year 1909. Appliances were procured for the washing and vulcanizing of crude rubber and for compounding, with the aid of which the bureau was enabled to make a practical study of the process of vulcanization and the influence of the chemical and physical processes therein employed.

For conducting tests of the strength of rubber, L. Schopper's (Leipzig) perfected testing machine, as well as a Martens-Schopper durability testing machine, were installed, the two first named being in regular operation.

The German cable factories had combined and in order to control the supply of insulated wire, had formulated conditions as to the quality of the rubber employed. The methods to be used in the analyses were drawn up by the chemists of the different factories interested, in co-operation with the Bureau.

In very many instances tests were made to determine the resistance of insulating substances to the chemical action of water, acids, alkalies, etc. This work is being continued during the current working year and methodical tests made of various insulating substances.

The elaboration of processes for the analysis of rubber, in compliance with the requests of the United Manufacturers of Insulated Wire, was another important phase of the work conducted by the Bureau. It was at once evident that the end desired would soonest be attained by a process for determining the amount of pure rubber actually present in rubber compounds, and for this purpose the method described by Axelrod, based on the precipitation of rubber as tetra bromide, seemed best adapted. A thorough test of the process, however, showed, in the original form, several sources of error, which reflected doubt on its reliability.

For determining the percentage of sulphur, a process had been elaborated by J. Rothe; in many instances a process devised by Hinrichsen, based on the electrolytic oxidization of the organic substances in the presence of nitric acid, was also used.

COMPARISON OF TESTING METHODS.

In advance of the official report for 1910, the fourth number of the 1911 "Communications" of the Bureau contains an interesting article by Dr. K. Memmler and Herr A. Schob, both of that institution, dealing with "The General Character of the Mechanical Testing of Soft Rubber," to some extent reviewing what has been done in the past. This paper supplements that read at Copenhagen in 1909 by the experts in question and forms an appropriate starting point for new investigations on the subject.

As an initial proposition, it is stated that two forms of mechanical testing call for discussion:

(a) A simple test of quality, such as is employed for metals, cement, etc. This test will of necessity be confined to determining the strength and elastic properties of a *rubber compound*, apart from the nature of the requirements, to which articles made from such compound (hose, discs, rings, buffers, molded pieces, etc.), may be liable in practice.

(b) A test in which either finished articles or samples obtained from them will be subjected to the same requirements to which the articles will subsequently be exposed in practice.

The latter method of testing, while possibly the more desirable from a practical standpoint, will be found upon consideration to be attended by manifold difficulties. As it is remarked, the extensive variety of rubber manufactures renders difficult the establishment of uniform bases for tests. Uniformity of testing methods cannot, however, be dispensed with, if it is desired to compare results obtained at different points. It is added, that from the experience acquired with other materials, the attainment of the desired object is more probable by the use of the first-named plan, a simple test of quality. Care must, however, be taken to establish this test in such a way that it may (without taking up too much time, or using an excessive quantity of material) be applied as a uniform standard to all rubber products. It must likewise not involve complicated testing arrangements.

QUALITY TESTS FOR RUBBER.

It is then deduced, that with systematic procedure it ought not to be difficult to collect detailed results as to the exact strength (resistance to fracture, changes of form, elastic reaction, etc.) of any description of rubber, with a view to its adaptability to a given purpose. Manufacturers and consumers, it is urged, will soon become accustomed to require, for instance, of a rubber for automobile tires, certain recognized fixed degrees of strength or other properties. An automobile tire can, it is true, be for experimental purposes attached to a shaft with a certain burden and a fixed number of revolutions, rotating upon a surface representing a given paving material.* But, it is asked, who will stand the expense involved by such a test of the comparative loss in weight of tires, when usually only a small order is involved?

The other manifold products of rubber, it is remarked, are in the same position as automatic tires, although less affected by considerations of expense than in the latter case where, if tests are to be made with direct reference to prospective uses, there will necessarily be a number of special trials.

WHY NOT CHEMICAL TESTS?

It is further remarked that an opinion prevails that a test for quality alone can be furnished by chemical analysis of rubber compounds. Against this contention it is, however, pointed out that such chemical analysis has not yet reached a position where generally recognized methods can be spoken of. Moreover, even with the hoped-for perfection of analytical processes, it will be difficult to deduce in all cases from its chemical composition, reliable conclusions as to the elastic and mechanical qualities of the rubber. In the same way the results of the chemical analysis of iron afford but limited guidance as to its mechanical properties.

With a view to the most exhaustive possible determination of the quality of rubber, efforts are recommended for the reciprocal expansion of the scope of both chemical analysis and mechanical tests of strength.

From these various considerations it is deduced that nothing remains but to try to build up mechanical rubber testing in the sense explained, on the basis of a simple test for quality. The chief question is then, whether the quality of the rubber is to be judged according to the samples cut out from the manifold products of the article, or according to types drawn from a compound already prepared.

With regard to this question, it is pointed out that tests on a large scale will be necessary to determine in what degree the strength of a rubber compound, or of various sized vulcanized

*See "Accurate Tests of Tire Efficiency," INDIA RUBBER WORLD, August, 1911, p. 443.

samples, is affected by the temperature or duration of the vulcanizing process.

FORM OF SAMPLES.

While the broad question of testing samples of rubber compounds or of finished products is thus dealt with in the interesting paper under review, the form of the samples to be tested is also treated in much detail, being further elucidated by tabulated results of tests recently made by the Bureau.

In dealing with the general question of testing rings or slabs it is stated that while ring tests are possibly not adapted for all cases, as long as there is nothing better, it seems advisable to continue experiments in that direction, and thus to collect experiences on the subject of rubber testing.

The recent tests of the Bureau were largely directed to the determination of various points affecting ring types. From the results obtained it would seem that the stamping out of sample rings is preferable to cutting them out, as it ensures uniformity of size, being also more economical. In this connection the adoption of a standard form of ring is urged, of uniform width, thickness and diameter, the results of tests being varied by the dimensions of the samples tested.

In conclusion, the authors of the paper remark:

"It will be a task deserving of thanks, if the Committee on Rubber Testing, recently appointed by the German Association for Testing Technical Materials, will devote full attention to the questions here discussed; particularly as to the dimensions of samples. That Committee will be all the more in a position to do so, as its composition affords it the facility of supplementing technical experiments by the practical tests of its members in the rubber industry."

Meanwhile, it is of interest to note that the Gross-Lichterfelde Bureau contemplates pursuing its tests and investigations upon the subject of rubber testing.

Arrangements have also been perfected for the keeping of rubber samples under various conditions, in moist and dry places, at normal and other temperatures, in darkness and light, with a view to ascertain the changes to which the samples of different compoundings and different degrees of vulcanization are subject under the above-mentioned conditions.

DIRIGIBLES 77 YEARS AGO.

WHILE it is a fact that the dirigible never before occupied so much space in public print as it does at the present time, still as far back as 1834 quite a little was published about dirigible balloons and their possibilities. In that year the French aeronauts, Messrs. Lenon and Edam, of Paris, published a dazzling prospectus of what they were about to achieve in their dirigible L'Aigle, which they advertised would start from the Champ de Mars about the middle of August and would carry them, their two intrepid wives and several other selected passengers on a trip to London some 290 odd miles away.

This dirigible was actually constructed according to the prospectus and was a thoroughly respectable affair—in appearance. It was 130 feet long, nearly 49 feet in diameter, and shaped like a fish; in other words, not very unlike in its proportions to the modern dirigible. It was inflated with hydrogen and had inside of the big balloon a second much smaller envelop full of air which, with the assistance of pumps, was compressed or rarefied to assist descent or ascent as the need might arise. At the ends of the balloon were wheels furnished with small wings for steering The propelling force was entirely hand machinery—which certainly would discourage any aviator of the present time. Beneath the balloon was a wicker car with accommodations for 10 people.

At the time advertised the dirigible was conveyed to the Champ de Mars and put in readiness for flight, but for some reason or other refused to fly. A great crowd had gathered and in order not to have its holiday spoiled, after giving the dirigible sufficient time to make good smashed it into small pieces. Such was the fate of the first ambitious dirigible mentioned in history.

EIGHTH INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY.

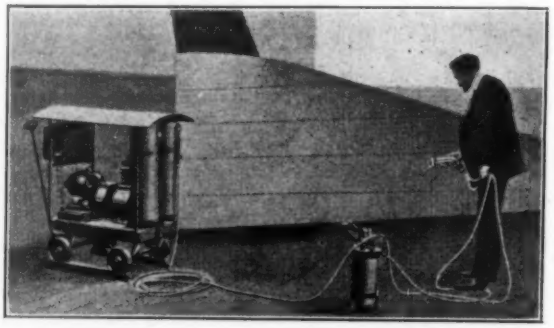
THE secretary of the International Congress of Applied Chemistry, Bernhard C. Hesse, No. 25 Broad street, New York, is sending out to authors who may wish to take part in that congress a set of preliminary rules which will regulate the submission of papers for consideration. The primary object in sending out these rules at the present time is to invite criticism and suggestions before the rules are formulated in their final form. Suggestions should be forwarded to him before December first next. The principal points covered in these rules are as follows:

All papers to be submitted to the congress should be in the hands of the secretary by June 30, 1912. They should not be so long that the time consumed in reading them, or at least in presenting their substance will exceed ten minutes. All papers should be in duplicate and legibly written, preferably typewritten and written only on one side of the sheet. Each paper must be accompanied by an abstract of its contents, and contributions must be absolutely original, and must not deal with historical matter any further than is necessary for the proper presentation of the particular topic. No paper accepted by the congress and printed in its report can be subsequently published elsewhere without giving full credit to this congress. No paper will be considered that is conspicuously polemical or contains advertising or matter of a personal character.

A circular giving all the rules in detail may be had on application to the secretary.

SPREADING WITH AN ATOMIZER.

SAYS *Popular Mechanics*, "Aeroplanes are now being made in such large numbers in France that time-saving methods are being adopted in their production. The way in which the fabric used for the covering of wings and rudders is coated with rubber



APPARATUS FOR SPRAYING AEROPLANE WINGS WITH A RUBBER SOLUTION.

to make it waterproof and give it better sustaining qualities in the air, as employed in the Deperdussin works in Paris, is shown in the illustration. Having been stitched together, the widths of muslin, cut to the desired shape, are stretched on frames and sprayed with a rubber solution. The spraying device is held in the hand of the operator and moved about in front of the cloth. One of the rubber tubes leading from it conveys solution from the portable tank on the floor and the other tube leads to the tanks of compressed air on the hand truck at the left. The supply of compressed air in the tanks is maintained by a small air-compressor driven by a small electric motor."

Just how this saves time is a question. It would seem as if a spreader or a calender would accomplish much more. Then too, the query arises as to vulcanization. Do they spray the rubberized aeroplane with chloride of sulphur or run it into a hangar fitted up as a dry heater?

The German Rubber Industry.

At the recent International Rubber Exposition, a series of graphic tables were displayed at the stand of the "Gummi-Zeitung." These included:

I. Production of Crude Rubber throughout the World, 1890-1910.

II. Germany's Imports, Exports and Consumption of Crude Rubber, 1890-1911.

III. Details of Germany's Crude Rubber Trade.

IV. Germany's Exports of Rubber Goods, 1890-1910.

V. Details of Germany's Exports of Rubber Goods.

VIII. Exports of Crude Rubber from German colonies.

IX. Price Fluctuations of Crude Rubber.

X. Development of Factories and Hands.

For the benefit of those not visiting the exposition, the principal tables have been reproduced in pamphlet form, with graphic

Germany's Rubber Imports and Exports. (Table II.)

illustrations. Of these the most important are reproduced below.

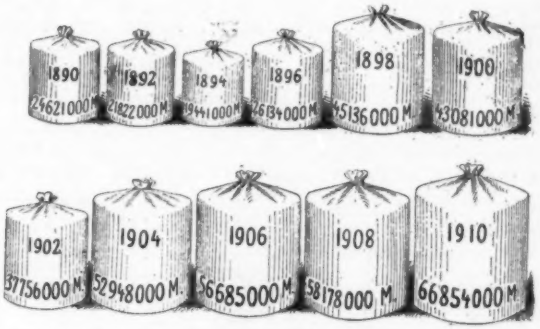
Table I shows from 1890 to 1910 the world's production of crude rubber, while table II shows in three divisions: (a) the portion which went to Germany, (b) the portion re-exported, and (e) the difference between (a) and (b), which represents the German consumption of crude rubber.

It is thus seen that a large proportion of the increased German receipts of crude rubber has been absorbed by the augmented domestic requirements of that country.

That Germany has gained ground as a distributing, as well as a consuming rubber market, is shown by a comparison of the results for 1890 and 1910, as given in Table II.

	German Crude Rubber. Imports.	German Crude Rubber. Exports.
1890.....	3,889 tons	858 tons
1910.....	33,316 "	10,136 "

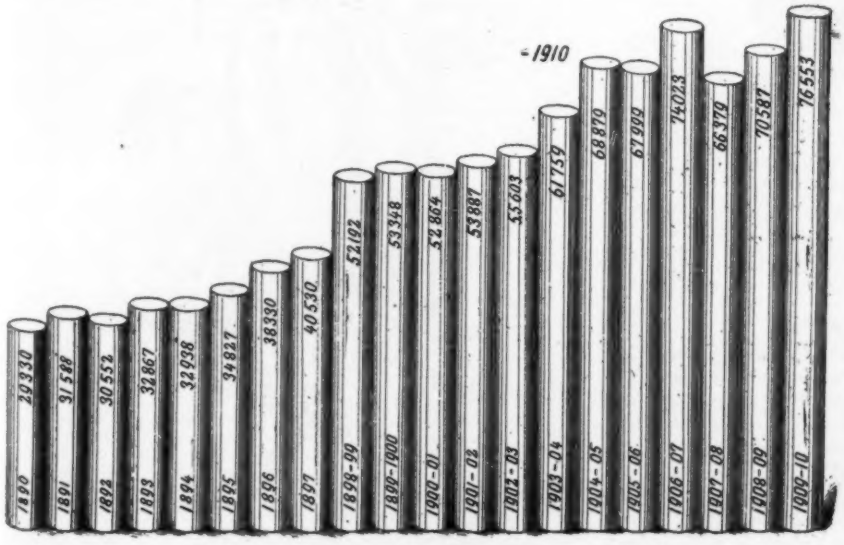
Table IV shows the growth of the German export trade in rubber manufactures during the twenty-year period. This last table, illustrating the German exports of rubber manufactures, is in many respects the most interesting; as showing a gradual increase from $6,155,250 in 1890 to $16,713,500 in 1910. Figures quoted indicate more than a five-fold increase in the



Germany's Exports of Rubber Goods. (Table IV.)

number of hands, as compared with 1882, the total having risen from 7,323 to 40,000.

With reference to Table VIII., the descriptive pamphlet states that experts from the German colonies fell off in 1908 owing to the character of the harvesting exhausting the trees. This plan has now been abandoned, in favor of a system for conserving the trees and planting new ones. Although the new plantations are not yet very productive, an increase of nearly 30 per cent. as compared with previous year was shown for 1909.



World's Production of Crude Rubber. (Table I.)

Table I.—World's Crude Rubber Production.

	Tons.
1890.....	29,330
1891.....	31,588
1892.....	30,552
1893.....	32,867
1894.....	32,938
1895.....	34,827
1896.....	38,330
1897.....	40,530
1898-9.....	52,192
1899-1900.....	53,348
1900-01.....	52,864
1901-02.....	53,887
1902-03.....	55,603
1903-04.....	61,759
1904-05.....	68,879
1905-06.....	67,999
1906-07.....	74,023
1907-08.....	66,379
1908-09.....	70,587
1909-10.....	76,553

Table II.—German Crude Rubber Statistics.

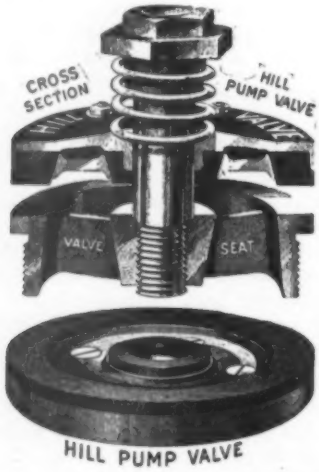
	German Imports.		German Exports.		German Consumption.	
	Double centners.	Tons.	Double centners.	Tons.	Double centners.	Tons.
1890.....	38,893	3,889	8,578	858	30,315	3,031
1893.....	51,993	5,199	11,621	1,162	40.372	4,037
1896.....	82,804	8,280	19,078	1,908	63,726	6,373
1899.....	137,037	13,704	54,088	5,409	82,949	8,295
1902.....	150,288	15,029	62,360	6,236	87,928	8,793
1905.....	213,930	21,393	78,506	7,850	135,424	13,542
1908.....	249,885	24,980	68,605	6,860	181,280	18,128
1910.....	333,149	33,316	101,357	10,136	231,792	23,179

Table IV.—German Exports of Rubber Manufactures.

	Marks.	Dollars.
1890.....	24,621,000	6,155,250
1892.....	21,822,000	5,455,500
1894.....	19,441,000	4,860,250
1896.....	26,134,000	6,503,500
1898.....	45,136,000	11,284,000
1900.....	43,081,000	10,770,250
1902.....	37,756,000	9,439,000
1904.....	52,948,000	13,237,000
1906.....	56,685,000	14,171,200
1908.....	58,178,000	14,544,500
1910.....	66,854,000	16,713,500

THE HILL PUMP VALVE.

The distinctive features of the Hill pump valve are brought out very well by the accompanying illustration. This valve is made with a bronze back into which rubber, metallic or composition discs are inserted with a view to meeting all pump



valve requirements, such as boiler feed, cold water, hydraulic, or oil. The discs are renewable and are held in place by a binder ring. These discs, supported and strengthened by the bronze body, form a perfect seal on the outer and inner circle of the seat so that no matter which way the valve may rotate it cannot ride on the bridges, thus preventing slipping and the trouble of constantly replacing the valves. [The Hill Pump Valve Company, Chicago, Illinois.]

RUBBER AND BREAD MAKING.

A. D. Thornton, superintendent of the Canadian Consolidated Rubber Co., Limited, once so plainly explained the "change" that vulcanization effects in rubber that it would be an excellent idea for rubber men to memorize his illustration for use when they are obliged to talk rubber to non-technical investigators. He said: "If you take flour and mix it with cold water and add a little yeast you have a mixture of flour, water and yeast, nothing else, but, if you place the mixture in a hot oven for a certain length of time you will produce bread, which is neither flour, water nor yeast but a chemical combination of the three. The first was a mechanical mixture but with the aid of heat you produce a chemical combination of the three, and the chemist has not yet been found who can return bread to flour, water and yeast.

"Take another combination, take a quantity of iron filings and sulphur; mix them together and you have a mechanical mixture of iron and sulphur, but if you place that mixture where there is sufficient heat the sulphur melts and combines with the iron and produces a new material which is neither iron nor sulphur, but a chemical combination called sulphide of iron.

"So it is with rubber; we take a certain amount of crude gum and add sulphur. We place this mixture of sulphur and rubber in a heater; when the temperature rises to a certain point the sulphur melts and becomes volatile, and at once begins to combine with the rubber, and after a certain length of time we have a new product—rubber such as the general public knows. It is elastic now, whereas before it was like putty, and although numerous chemists are continually at work trying to find a means of restoring vulcanized rubber to its unvulcanized state, no one as yet has been able to do it.

A MACKINTOSH WITH KNEE EXTENSIONS.

Cap with Curtain.

The motorcyclist can now enjoy his machine regardless of weather, for a storm coat has been devised which has extensions which when not needed are buttoned up inside the coat, but when needed can be let down and drawn down over the knee and held there by a strap. The accompanying illustration shows the coat with one of these knee extensions dropped down ready for use and the other buttoned up inside the coat.

From the same English source comes a leather cap with a rubberized fold or curtain that can be let down around the back of the head, protecting

Mackintosh Coat with Knee Covers.

the ears and the neck. (Dunlop Rubber Co., Ltd., Birmingham, England.)

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED AUGUST 1, 1911.

NO. 999,197. Spring wheel. Hans C. Bergerud, Fergus Falls, Mass.
999,302. Pneumatic tire. Mark A. Dees, Pascagoula, Miss.
999,358. Reinforced resilient heel for boots and shoes. Arthur Ashley, Melbourne, Victoria, Australia.
999,382. Boot-holder. Axel Lundgren, Chicago, Ill.
999,384. Antislipping device for vehicle wheels. Thomas Charles Martin, Cleveland, Ohio, assignor to Barrell Holding and Manufacturing Co.—a corporation of Maine.
999,402. Inflated tire. Amos J. Roussey, Fort Wayne, Ind., assignor of one-third to Walter F. McLallen, Columbia City, Ind.
999,506. Air-tight valve for pneumatic tires. Morris Levrant, New York.
999,511. Wheel-tire. Joshua D. Marvil, Laurel, Del.
999,526. Base-ball. Benjamin F. Shibe, Bala, Pa.
999,607. Wheel-hub for automobiles and similar vehicles. Albert P. Stocker, Struthers, Ohio.
999,609. Cushion attachment for wheels. Roy Ulrich, Overton, Neb.

Trade Marks.

55,918. Elwell Rubber Mfg. Co., Trenton, N. J., and Boston, Mass. The words *Panther Tread*. For rubber heels.
56,860. John C. Milne, New York. The word *Milnart*. For rubberized waterproofed fabrics.

ISSUED AUGUST 8, 1911.

999,760. Tire-shield. James W. Downes, Spokane, Wash.
999,803. Non-refillable bottle. Samuel B. Kull, New York.
999,810. Tire. David Lippy, Mansfield, Ohio.
999,819. Process of forming articles from waste rubber. John Markus, Manchester, England.
999,960. Resilient wheel. Victor E. Clark, Grand Rapids, Mich.
1,000,000. Vehicle tire. Francis H. Holton, Akron, Ohio.
1,000,069. Pneumatic tire. Charles E. Browler, Memphis, Tenn.
1,000,110. Detachable rubber heel. Francis A. Nolan, St. Paul, Minn.
1,000,165. Vehicle tire. John B. Fischer, Chicago, Ill.
1,000,168. Plug-inserting device. Joseph Glanz, Hartford, Conn.
1,000,215. Elastic horseshoe. Farley D. Veale, Washington, D. C.
1,000,297. Shield for icemen and others. Charles G. Sagerstrom, Chicago, Ill.

Trade Marks.

57,225. Edward C. Griffith, New York. The word *Independent*. For rubber automobile tires.
57,311. Goodyear Rubber Co., San Francisco, Cal. The word *Rhino*. For rubber hose.
57,333. The B. F. Goodrich Co., Akron, Ohio. The word *Maxecon*. For belting and tires.

ISSUED AUGUST 15, 1911.

1,000,424. Separable demountable rim. George H. McClatchy, Philadelphia, Pa.
1,000,508. Tire-holder. Frank Sellers Garrett, assignor to himself and Henry Keppele Miller—all of Wilmington, Del.
1,000,524. Tire-plug. Gustav A. E. Kaul, Hackensack, N. J.
1,000,581. Protector for drinking glasses, etc. Robert Clarke, Brooklyn, N. Y.
1,000,662. Tire-grip. Andrew F. Bergin, Howell, Mich.
1,000,781. Manufacture of flexible material from india-rubber and the like. Arthur Thomas Collier, St. Albans, England.
1,000,894. Detachable heel. Andrew W. Carlson, Spokane, Wash.

Trade Marks.

53,458. Standard Asphalt & Rubber Co., Jersey City, N. J. The word *Sarcolithic*. For mineral rubber pavements.
56,051. Louis Burger, New York. The word *Kensington*. For garters and armbands.

ISSUED AUGUST 22, 1911.

1,001,151. Rubber-stamp aligner. Orlando E. Kellum, assignor of one-half to L. P. Sargent—both of Los Angeles, Cal.
1,001,208. Fire-hose reel. Clarence E. Mercer, Denver, Colo.
1,001,237. Vehicle tire. Wolsey R. Barbour, Terre Haute, Ind.
1,001,384. Tire. John W. Burgess and George F. Burgess, Brookfield, Mo.
1,001,492. Armored pneumatic tire. Charles F. Williams, Atlanta, Ga., assignor to James T. Andrew, Montgomery, Ala.
1,001,513. Resilient wheel. Pierre Decauville, Paris, France.
1,001,518. Tire protector. Mathew J. Frambach and Aldon R. Corrington, assignors of one-half to G. E. Knaack, Hartley, Iowa.

Design.

41,698. Golf ball. Charles W. Royce, Montclair, N .J.

Trade Mark.

55,096. Edward Sander, New York. The word *Semloh*. For rubber syringes.

ISSUED AUGUST 29, 1911.

1,009,621. Tank-valve ball. Louis A. Cornelius, Grand Rapids, Mich.
1,001,623. Emergency tire. Charles M. Culp, South Bend, Ind.
1,001,632. Tire-holder. Frank Sellers Garrett, assignor to himself and Henry Keppele Miller—both of Wilmington, Del.
1,001,663. Vehicle tire. Arthur H. Marks, Akron, Ohio.
1,001,686. Resilient wheel. Giuseppe Restucci, assignor of one-half to Thomas P. Pugliatti—both of Naples, Italy.
1,001,693. Packing. Walter E. Sanders, Cleveland, Ohio.
1,001,714. Resilient wheel. Enos A. Wall, Salt Lake City, Utah.
1,001,715. Spring wheel. Enos A. Wall, Salt Lake City, Utah.
1,001,734. Nose-guard for spectacles. George H. Day, Southbridge, Mass., assignor to American Optical Co., a corporation of Massachusetts.
1,001,753. Wheel structure. Manning Goldsmith, Decatur, Ga.
1,001,802. Demountable rim. John Baker, Pasadena, Cal.
1,001,842. Hose. Edwin T. Greenfield, Kiamesha, N. Y.
1,001,886. Demountable rim. Elwood C. Phillips, Chicago, Ill., assignor to Phillips Demountable Rim Co., Indianapolis, Ind.
1,001,891. Security-bolt for vehicle wheel tires. John David Rowland, Birmingham, England.
1,001,892. Balloon-envelope material. Julius Rund, Frankfort-on-the-Main, Germany.
1,001,940. Self-fitting petticoat. William Epstein and Samuel Epstein, New York.
1,002,040. Shock-absorber. John T. Costello, Pittsburgh, Pa.
1,002,046. Elastic tire. Giles S. Doty and John D. Snow, Philadelphia, Pa., assignors to D. & S. Airless Tire Co., a corporation of Delaware.

Design.

41,736. Matting. Clifford H. Oakley, Trenton, N. J.

Trade Mark.

57,174. Nashawannuck, Manufacturing Co., Easthampton, Mass. The word *Twillette*. For elastic webbing.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1910.

**Denotes Patents for American Inventions.*

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 2, 1911.)

8,457 (1910). Tire attachment to rims. W. A. P. Werner, London.
8,463 (1910). Seating for rubber wheel-cushion. J. Gorst, Chester, Eng.
8,491 (1910). Reinforcement for pneumatic tires. A. E. Henderson, Ballymeanoch, Lochgilphead, Scotland.
8,591 (1910). Plastic composition of rubber and cork. J. C. Whitley, Halifax, Yorkshire.
*8,703 (1910). Tires and inflation of same. H. P. Maxim, Hartford Conn.
8,710 (1910). Improvements in inflated balls for tires. G. Madden, Islington, London.
*8,790 (1910). Rubber casing sleeve for non-refillable bottles. J. H. Quinn, Stoyestown, Pa.
8,818 (1910). Rubber foundation for sticking plaster. H. Von Gimborn & Zifferer, Vienna, Austria.
8,855 (1910). Rubber sheaths for typewriter fingers. J. C. Fell, London.
8,871 (1910). Ring for condiment receptacles. A. C. Towers, Dalston Junction, London.
8,993 (1910). Reinforced air tubes for tires. E. Overy, Canning Town, and W. F. Gould, Forest Gate—both in London.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 10, 1911.)

9,190 (1910). Use of rubber in floor coverings. H. Linnekogel, Stuttgart, Germany.
9,205 (1910). Rubber buffers in centrifugal separators. H. J. Haddan, London.
9,219 (1910). Process for manufacturing synthetic rubber. W. R. Hodgkinson, Blackheath, England.
9,393 (1910). Tire inflating valves. A. V. Park, South Melbourne, Australia.
*9,416 (1910). Tire tread bands. J. Corwin, Chicago, Ill.
9,419 (1910). Cushioning devices for vehicle wheels. E. Favary, London.
9,430 (1910). Molding wheel tires. A. C. Squires, Akron, Ohio.
*9,431 (1910). Elastic straps for corsets. M. C. Ninde, Fort Wayne, Ind.
9,439 (1910). Use of rubber in golf club heads. F. Murray, Murrayfield, Edinburgh, Scotland.
9,505 (1910). Heel and sole protectors. J. E. M. Cooke, of Markham & Roberts, Stafford.
9,579 (1910). Elastic substance like rubber. W. Van der Heyden, Amsterdam, and J. Jurgens, Nymegen, Holland.
9,588 (1910). Extraction of rosin from crude rubber. W. Elsner and O. Meyer, both of Hanover, Germany.
9,609 (1910). Elastic or resilient masses. W. Plinatus, Paris, France.
9,614 (1910). Improvements in tire treads. W. E. Carmont, Richmond, Surrey.
9,616 (1910). Elastic or resilient masses. W. Plinatus, Paris, France.

9,636 (1910). Rubber substitutes containing cellulose. J. B. Scammell, London.

9,686 (1910). Solvent for rosin present in rubber. J. B. Gall, Eltham Park, Kent.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 16, 1911.)

9,727 (1910). Tread bands for tires. F. Melton, Nunhead, London.

9,728 (1910). Rubber tires expanded in mold. W. T. Clifford, Barnes, London.

9,741 (1910). Machines for manufacturing tire covers. P. Roussillon, Suresnes, Seine, France.

9,747 (1910). Tension-spoke wheels fitted with twin tires. A. J. Bowron and Dunlop Pneumatic Tyre Co., both in Coventry.

9,773 (1910). Flexible pipes for spraying machines. B. Clough, Armley, Leeds, and J. Edmondson, Pudsey, near Leeds.

9,830 (1910). Tire covers. W. J. Potter, Elysia, Woodham Ferris, Essex, England.

9,842 (1910). Tire inflating valves. "Captain" Motor Wheel Co., and S. A. Currin, Bristol.

9,844 (1910). Detachable rim attachments to wheels. S. A. Currin and "Captain" Motor Wheel Co., Bristol.

9,910 (1910). Tire attachments to rims. A. Whiteway and C. Macintosh & Co., Manchester, England.

9,912 (1910). Tire attachments to rims. J. A. Harrison and G. Hookham, Birmingham.

9,955 (1910). Absorption of chlorine in rosin by milky juice of guayule. K. L. V. Zimmer, Hamburg, Germany.

9,961 (1910). Tire attachments to rims. J. A. Harrison and G. Hookham, Birmingham.

9,994 (1910). Rubber driving belts for motorcycles. I. Appleby, Aston, Birmingham.

9,997 (1910). Block tires and tire attachments to rims. J. H. Betteley, London.

*10,022 (1910). Tread bands for rubber tires. I. B. Kempshall, Washington, D. C.

10,044 (1910). Apparatus for building and repairing tires. R. Fiedler, Berlin.

10,047 (1910). Tire covers with internal layers. Soc. Deborger et Cie., Paris.

10,056 (1910). Coagulating rubber latex. R. Rankin, Elmbank, Hamilton, Scotland.

10,082 (1910). Rubber cushioning blocks for loose-leaf binders. British Loose Leaf Manufacturers, London.

10,193 (1910). Clamps for jackets of pneumatic tires. W. Uellner, Dusseldorf, Germany.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 23, 1911.)

10,309 (1910). Air tubes and chambers. W. J. Potter, Elysia, Woodham Ferris, Essex.

10,361 (1910). Regulating auto-oxidation of rubber. W. Ostwald, Leipsic, Germany.

10,447 (1910). Molded covering for rubber tires. R. Shelley, Birmingham, and D. E. Brown, Abbots Langley, Hertfordshire.

10,453 (1910). Manufacture of rubber balloons. A. Engelke and M. Ganz, Brussels.

10,475 (1910). Rubber rings for milk bottles. P. Meeus, Antwerp, Belgium, and Banque Centrale de Fonds Publics, Brussels.

10,565 (1910). Rubber cushion heels. G. Looms, Market Harborough.

10,615 (1910). Protective bands for treads of rubber tires. A. Kingston, Wellingborough.

10,655 (1910). Leather jackets for pneumatic tires. C. J. Walker, North Fitzroy, near Melbourne, Australia.

10,657 (1910). Repairing of rubber tires. J. G. A. Kitchen, Scotforth, Lancashire, and I. H. Storey, Ambleside, Westmoreland.

10,674 (1910). Rubber strips in blotting pads. J. Stockinger, Holzhäuser, Post Ruhstorf a/Rott, Germany.

10,720 (1910). Tire covers with continuous internal layers. T. C. Pett and A. A. Donald, Bull Ring, and F. J. Solomon, Camden—both in Birmingham.

10,851 (1910). Tire covers with continuous internal layers. J. Webster, Paradise, Foreshill, Coventry.

10,852 (1910). Rubber covered base for ladders. G. E. Harper, Birkenhead.

*10,922 (1910). Impregnated bottle stoppers. J. H. Ketcheson, St. Louis, Mo.

10,927 (1910). Intermediate rubber band in air tubes. H. W. Lake, London, England.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 30, 1911.)

10,945. Plastic washers for rotary pumps. J. Raclot and C. Enderlin, Boulevard National, St. Maur des Fossés, Seine, France.

10,984. Reinforced air tubes for tires. B. B. Hill, Princess May Road, Stoke Newington, London, England.

10,992. Tire attachments to rims. G. Standen, Watersfield, Pulborough, Sussex, and F. A. Jackson, Bishop Frome School, Worcester.

11,034. Horseshoes with dove-tailed rubber insertions. E. L. Haydon, Norfolk Square Hotel, London Street, Paddington, London.

11,126. Clips for tire inflators. E. R. Carroll, Mountain View Road, Ranelagh, Dublin.

11,136. Tire covers with continuous internal layers. R. Rohm, Cellerstrasse, Braunschweig, Germany.

11,174. Air tubes and chambers; tire covers. J. A. Legh, Rydal Vicarge, Ambleside, Westmoreland.

11,229. Manufacture of rubber dress shields. E. C .R. Marks, Lincoln's Inn Fields, London, England.

11,235. Belts with attached pieces of elastic. W. C. Ellis, 18 Aldermanbury, London, England.

11,255. Rubber attachment for bandages. J. E. Arnold, West Smithfield, London, England.

11,299. Elastic tire bodies and cores. H. C. l'Anson, Cleveland Terrace, Darlington, Durham.

11,329. Rubber tires supported by springs. G. Lowthian, Parliament Street, Westminster.

11,340. Tire attachment to rims. F. Frowein and L. Brinck, 5 Rue des Camions, Brussels.

11,369. Rubber-covered collar stiffeners. J. C. Round, "Purbrook," Crescent Wood Road, Sydenham Hill, and W. F. Freeman, 9 Southampton Street, High Holborn—both in London, England.

11,385. Vulcanized ferrule for electric lamps. W. Crossley, Lumbrook, Northowram, near Halifax, and J. Harmer, 10 Broad Street, Halifax, Yorkshire.

11,495. Supports for detachable wheels and rims. F. J. Keegan and Dunlop Pneumatic Tyre Co., Alma Street, Coventry.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

425,176 (January 24, 1911). H. Dittmar. Fabric for balloons.

425,186 (January 24). A. Scherber. Pneumatic cushion.

425,225 (January 25). E. Radke. Wheel with elastic tire for vehicles.

425,310 (January 27). J. Reuse and C. Reuse. Improvement in rubber tires.

425,355 (January 28). Société des Etablissements Moreaux & Cie. Anti-skid bandage for pneumatic tires.

425,358 (January 28). V. Mazillier. Wheel tires.

425,397 (January 30). M. Desson. Improvements in pneumatic tires.

425,507 (February 1). J. Touzelet. Elastic tire.

425,560 (February 3). B. Buscaglia. Elastic tire for vehicle wheels.

425,580 (February 4). J. Steinberg. Improvements in pneumatic tires for automatic repair.

425,658 (January 28). J. Bocuze. Rotating rubber chair tips for boot heels.

425,691 (February 8). H. E. Rechner. Automobile and other tires.

425,734 (April 12, 1910). A. Dessouy. Process for manufacture of pneumatic covers for vehicle wheels.

425,739 (April 12). Société Anonyme Pneu Cuir "Samson." Method for reconstruction of old pneumatic tires.

425,741 (February 4, 1911). Société des Anciens Etablissements Houry et Filleul-Brohy. Wheel tires for cycles and other vehicles.

425,753 (February 7). T. L. Carbone. Elastic tire with rigid internal rings.

426,087 (February 15). W. Butterfield & Jones. Wheel tires for automobiles and other vehicles.

426,107 (April 23, 1910). H. de Chardonnet. Elastic tires with spirals of metallic wire for wheels of all kinds of vehicles.

425,999 (February 13, 1911). Russian-American India-Rubber Co. "Treugolnik." Side elastic for leather foot-wear.

426,172 (February 17). B. Hüsing. Improvements in pneumatic tires.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingénieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

THE GERMAN EMPIRE.

PATENTS ISSUED (with Dates of Validity).

236,908 (from June 24, 1910). Naamlooze Vennootschap Hollandsche Zyde Maatschappy, Amsterdam. Plastic mass from milk.

237,071 (from October 12, 1910). Adolphe Dejardin, Brussels-Etterbeck. Appliance for chopping up rubber vines and plants.

236,728 (from June 3, 1910). Rudolf Zimpel, Gross Lichterfelde East, Berlin. Manufacture of filling substance for vehicle tires.

236,913 (from August 13, 1910). Naamlooze Vennootschap Allgemeene Uitvinding Explortatie Maatschappy, Amsterdam. Elastic material similar to rubber.

237,719 (from April 5, 1910). Rudolf Simonek, Stránka near Melnik, Bohemia. Anti-skidding appliance for vehicles.

237,789 (from February 5, 1910). W. Pahl, Dortmund. Process for coagulation of rubber latex.

237,970 (from September 11, 1910). Andreas Katzensteiner, Oberndorf a. N. Rubber substance for closing air valves of tires.

238,059 (from December 10, 1909). Wilhelm Buess, Hannover. Tire valve opened by pump.

238,060 (from July 26, 1910). Francesco Allasia, Bricherasio, Italy. Protective covering for vehicle tires.

238,061 (from November 25, 1909). Rudolf Krasemann, Fischergrube 36, Lübeck. Metallic jointed covering for pneumatic tires.

BROOKLYN HAS ALWAYS BEEN LOOKED UPON AS THE particular habitat of the rubber plant, but it seems the cult is spreading westward and has got as far as Jersey City, where the police records show that during the last two weeks of August there were 25 separate complaints of thefts of rubber plants. That thieves should steal them and that their owners should make such an outcry about the matter shows the popularity of the rubber plant in Jersey City, but the palm must still be accorded to Brooklyn, where the rubber plants are so constantly and carefully guarded that there is no record that they have ever been burglarized.

The Editor's Book Table.

NOTES SUR *L'HEVEA BRASILIENSIS EN COCHINCHINE*. BY J. Lan. Saigon: Imprimerie F. H. Schneider. 1911. [Paper. 8vo. Pp. 143.]

ASIATIC plantation rubber being now an accomplished fact, the story of its introduction has passed into the domain of history. Yet a good deal depends on the manner in which such a topic is presented. In the handbook dealing with the cultivation of the *Hevea Brasiliensis* in Cochin China, J. Lan, Director of the Cochin China Agricultural and Commercial Services, and thus an official authority on the subject, connects the past with the present by referring to the introduction of *Hevea* into Asia, by the help of plants raised at Kew from seeds gathered on the banks of the Amazon by H. A. Wickham.

Dealing with *latex*, a relatively large portion of the 143 pages is devoted to its analysis, extraction and coagulation, the work being thus of special interest to planters able to read it in the original French. Expanding the range of his subject Mons. Lan then takes up the questions of climate and soil, sowing, and maintenance of the plantation, leading up to the more general points.

According to figures quoted there were in Ceylon in 1909 about 220,000 acres in *Hevea*; while at the same period the Malayan Peninsula then had more than 250,000 acres. The area of *Hevea* in Borneo and Dutch India was over 90,000 acres, while Southern India and Burma represented 25,000 acres.

The most recent statistics are those of Cochin China itself, which may be summarized as follows:

Provinces.	Acres bought or under concession.	Acres planted in *Hevea* Jan. 1, 1911.
Baria	30,000	1,350
Bienhoa	70,000	2,500
Giadinh	12,500	5,000
Hatien	6,500	450
Tayninh	3,500	90
Thudaumot	11,500	1,300
Total	134,000	10,690

There is consequently plenty of Cochin China *Hevea* in view.

In the final passage of this interesting work is reproduced the opinion of H. Brenier, Inspector General of the Agricultural and Commercial Services of Indo-China, which gives an instructive view of the outlook from a French standpoint: "In a word only those enterprises will survive in the crisis of plantation rubber (to be foreseen in ten years, and probably sooner), in the conduct of which, under equal natural conditions, the *human factor* will predominate, though good sense and opposition to excessive capitalization. Intelligence and knowledge must be applied to the direction by the judicious organization of a numerous and efficient staff, attached to the soil by comfortable and hygienic conditions, as well as by suitable remuneration."

O PLANTIO DA BORRACHA (HEVEA BRASILIENSIS) E A PRODUCÇÃO do Caucho (Castilloa, Ulei, Warb.). (These apresentadas ao Congresso Commercial, Industrial e Agricola do Amazonas, em Fevereiro do 1910.) By J. A. Mendes. Pará, Brazil: Livraria Escolar. 1911. [Paper. 8vo. Pp. 56.]

In this reprint of recent date two papers are reproduced, which had been read by Señhor J. A. Mendes at the Amazonas Commercial, Industrial and Agricultural Congress of February, 1910. In the first-named paper he deals, among other points, with his visit to the United States in the preceding year, on which occasion he had introduced to the American importing trade his improved method of preparing *Hevea* and *Caucho*. In the statistical tables, which he quotes, is shown the rise of the Amazonian production during 10 years from about 50,000,000 pounds of rubber and 5,000,000 pounds of caucho in 1899 to about 68,000,000 pounds of the former and 18,000,000 of the latter in 1909.

The second paper deals with the history of caucho production, the figures of which are given in the statistical table already referred to.

DANGERS, MISTAKES AND IMPROVEMENTS CONNECTED WITH the Production of Rubber in Asia. By D. Sandmann. Berlin: 1910. [Paper. 8vo. 41 pages.]

WHILE this interesting booklet only deals with actual facts as late as 1909, its contents, as far as the planter is concerned, are of ever present interest. After dealing with the historical and statistical features of the subject, Herr Sandmann discusses the Asiatic labor question as affecting rubber production, quoting the opinion of an experienced planter to the effect that in some years' time the amount of rubber produced will not depend upon how many trees are ready to be tapped, but upon how many workmen are to be had to do the work. Hence further improvements in the methods of planting and preparing the latex will be necessary to lessen the difficulties arising from lack of laborers. In pursuance of this idea the author then enlarges upon certain points of importance for the further development of plantations, which will appeal to planters in general.

GEOLOGY OF THE GOLD FIELDS OF BRITISH GUIANA. BY J. B. Harrison, C.M.G., M.A., F.I.C. and F.G.S., Director of the Department of Science and Agriculture and Government Geologist, Georgetown, Demerara. 8vo, 320 pp. with numerous illustrations; historical, geographical and other chapters by Frank Fowler, Commissioner of Lands and Mines, and G. Wilgress Anderson, F.G.S., F.R.G.S., Government Surveyor, and an appendix giving the laws and regulations governing the mining industry. Published by the direction of His Excellency Sir Frederick M. Hogdson, K.C.M.G., Governor of British Guiana. London: Dulan & Co.

WITH an opening chapter on the "History of Gold Mining in British Guiana," in which statistics showing the output of the precious metal are presented, the work proceeds to give an account of the general physical and topographical features of the colony and the petrography of its geological formations, illustrations made from photographs showing the nature and wild beauty of the colony scenery. The auriferous and diamantiferous deposits, their occurrence, making and output, are considered at length, the concluding chapters being devoted to information of a practical character, for those engaging in mining operations in the colony. A carefully compiled index completes the volume, which constitutes a valuable and instructive addition to the literature descriptive of British Guiana and its resources.

INTERNATIONAL RUBBER EXHIBITION (LONDON, 1911) CEYLON Handbook. By R. H. Lock, M.A., Sc.D., Assistant Director Royal Botanical Gardens, Peradeniya, and C. O. Macadam. Illustrated. With a number of photographic views. [Octavo, 32 pages; stiff paper covers.]

CEYLON is an exceedingly interesting country, viewed from a rubber standpoint; not only because of the magnitude of the industry of rubber planting in the island, but particularly because the first rubber trees planted in the East were planted in Ceylon. This little pamphlet, which was intended primarily for the London Exhibition, is full of useful information. It describes the climate, topography and agricultural products, as well as the characteristics of the various races that constitute its inhabitants.

The first rubber trees were planted in Ceylon in 1876 from the seeds secured in the Amazon country by Mr. Wickham. One of those original trees yielded 160 pounds of dry rubber in the two years 1909 and 1910. In 1900 only 1,750 acres had been planted to rubber—in the spring of the present year this number had increased to 238,822. This little book pictures a very encouraging outlook for rubber planting in Ceylon.

THE accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

Crude Rubber Imported Into Japan in 1910.

Report by Japanese Custom-house Office of the Department of Finance, July 23, 1911.

THIS year's crude rubber imported into Japan has amounted to 1,590,891 pounds in quantity and $1,476,892 in value, showing an increase of 259,066 pounds and $765,584 compared with 1909. The details of the above are as follows:

From	1910. Pounds.	1910. Value.	1909. Pounds.	1909. Value.
British India	54,505	$44,241	46,448	$34,360
Federated Malay States	898,543	605,091	493,536	207,409
Dutch India	120,333	68,959	303,849	154,512
Philippines	.....	.....	20,476	9,510
Great Britain	313,517	465,555	268,553	206,937
Germany	13,972	20,223	4,905	3,336
United States of America	86,013	119,445	172,805	74,857
All Other Countries	104,008	153,378	21,253	20,387
Total	1,590,891	$1,476,892	1,331,825	$711,308

The increase of crude rubber imported in 1910 was the result of a greatly increased demand because of the development of rubber manufacturing. For example, the Dunlop Rubber Company, which was established at Kobe in 1908, and had principally manufactured tires for bicycles had gradually by the end of 1909 increased the variety of its rubber manufactures to meet the greatly increased demand. Their crude rubber was all imported from Singapore.

The crude rubber imported from Singapore was divided into two kinds; one imported through Singapore from elsewhere, and the other produced in Singapore; and this year's increases were in the former grade. The crude rubber imported from Java and the Philippines to Japan was mostly wild rubber, but in the future we will see both wild and plantation rubber imported here, for there are many rubber plantations in Java and Philippines. The crude rubber from North America was divided into two kinds, both imported through North America from Brazil. Thus the greater part of the crude rubber imported into Japan comes generally under six classifications—India Rubber, Borneo rubber, plantation Pará rubber, gutta-percha, balata and jelutong—of these six kinds jelutong is in some small demand for mixing with other materials. The quantity of this kind imported in 1910 amounted to about 6,667 pounds, being imported from Singapore. From British India some India rubber and plantation Pará rubber was imported; from Singapore some India rubber, plantation Pará rubber, Borneo rubber and gutta-percha. From Great Britain, Germany and the United States of America, all being market places, all kinds of crude rubber were imported. Balata was imported principally from Great Britain. Pará rubber was imported for the reason that excepting large rubber mills, many manufacturing companies were short of stock and used Pará with other descriptions.

As to the price, the highest was Pará rubber from South America, the next plantation Pará, the third India rubber and the fourth Borneo rubber. Some of the crude rubber from Africa was high-priced and some of it cheap.

Speaking about the market price of these rubbers, the rubber which was recognized as the standard of value was fine Pará rubber from South America, which is said to be the best kind of crude rubber in the world and to set a standard price for all other crude rubbers. The price of fine Pará rubber rose from the middle of February, 1910, finally reaching $3 in the London market in April of that year. Afterward the price of fine Pará rubber dropped down to 4 yen, 30-40 sen ($2.09—14). In August

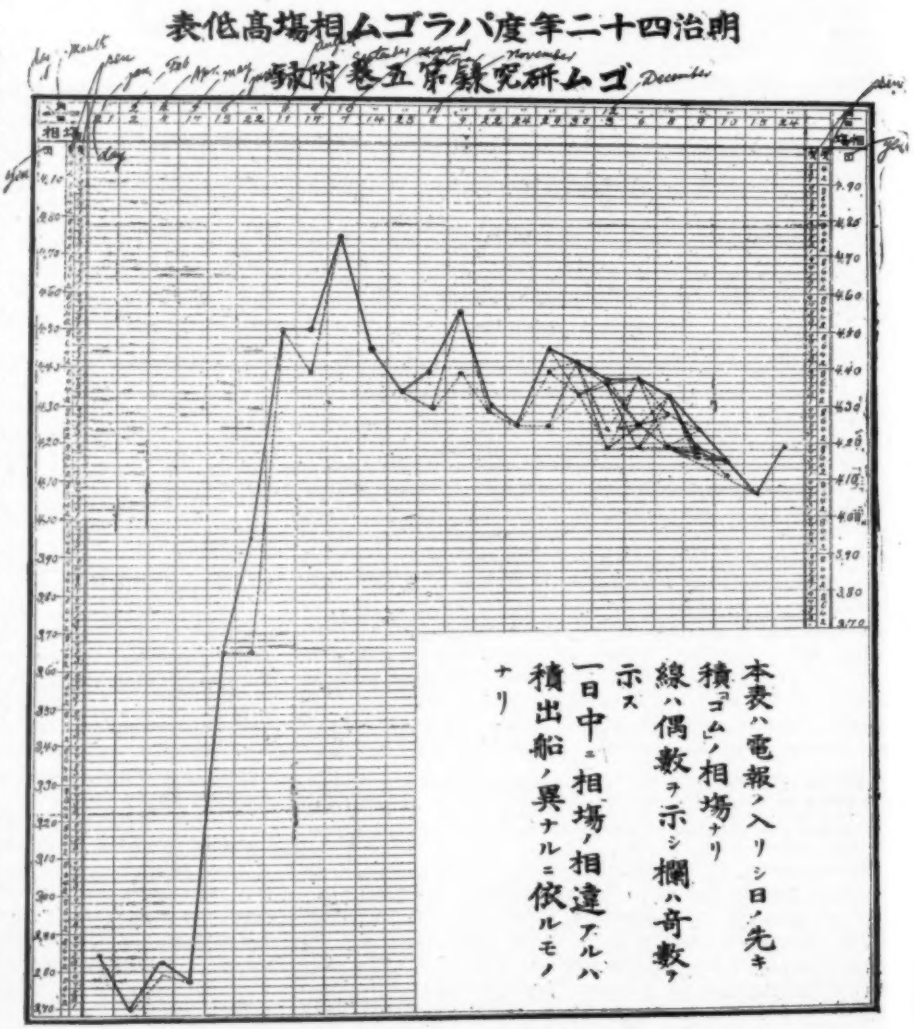


CHART SHOWING PRICE FLUCTUATIONS OF PARA RUBBER IMPORTED INTO JAPAN IN 1909.

it was down as low as 3 yen, 10 sen ($1.51), and afterward gradually rose higher and, finally, by the end of October rose to 3 yen 80 sen ($1.84). From the beginning of November to the end of the year, the price dropped down to 3 yen 30 sen ($1.60).

The market price of all other kinds of crude rubber at the end of the year was as follows:

Borneo rubber, first's, per 100 kin (133⅓ lbs.)	yen 200.00	($97.08)
Borneo rubber, seconds, per 100 kin (133⅓ lbs.)	yen 170.00	($82.53)
Plantation Pará rubber, firsts, per lb.	yen 3.00	($1.47)
Plantation Pará rubber, seconds, per lb.	yen 2.80—90	($1.36—41)
Pará rubber (from South America), common, 1 lb.	yen 3.50	($1.69)

Borneo rubber was classified as of three kinds (from firsts to thirds) and the price of the thirds was 15 yen ($7.27) cheaper than the price of the seconds. Plantation Pará rubber was divided into five kinds, but plantation Pará rubber imported into Japan was only of two kinds, firsts and seconds.

CONDITIONS IN JAPAN.

The general economic conditions in Japan for the year 1910 were quite satisfactory. Owing to the national trait of thrift the savings of the people were large and material progress was made in the redemption of national loans; and available capital became abundant. There was noticed also a greatly decreased tendency to go into speculative ventures, a condition which prevailed after the war with Russia.

During the year there was an excellent volume of trade and particularly an increase in the exportation of raw silk and cotton yarn, in which the cost of production has been materially lessened because of the ability to get cheap capital and owing further to improved methods of manufacture.

JAPANESE JINRIKISHAS AND RUBBER TIRES.

By a statement in the "Gomu Shimpo," it would seem that the introduction of rubber tires for *jinrikishas* is giving rise to complaints from the men who draw those vehicles. Instead of the occupants feeling the effects of the quicker motion caused by increased speed, they are practically saved from the results of such greater agility, which they in consequence do not appreciate. Moreover the *jinrikisha* men object to the higher cost of rubber tires and to the increased tax which they involve.

JAPANESE IMPORTS OF TIRES.

The largest proportion of the tires imported by Japan comes from the United Kingdom. During 1910 the imports represented about 307,522 lbs. of the aggregate value of $358,385. Analysis of the figures shows:

	Pounds.	Value.
United Kingdom	291,574	$340,467
United States	8,037	12,032
Germany	6,038	4,328
France	1,872	1,558
Total	307,521	$358,385

THE CONGO AS AN OUTLET FOR RUBBER GOODS.

Since the Belgian Government has been giving serious attention to the commercial re-organization of the Congo, that country has become a center of interest for export trade. The business is said to be chiefly in the hands of German and Portuguese firms, who are in relation with the important local houses, from whom the small native dealers get their supplies of wearing apparel. In the last-named branch, rubber manufactures are said to be of importance.

HOW THE JAPANESE INCORPORATE.

So much interest has been shown by the trade recently in Japanese rubber companies that we have made an abstract of the articles of incorporation of one of the leading companies, which we give below:

PRELIMINARY.

The object of this corporation is to manufacture and sell general rubber goods.

Notice of this incorporation shall appear in newspapers designated by the district court.

CAPITAL AND STOCK.

The capital of this corporation shall be 300,000 yen, divided into 6,000 shares of 50 yen each. Each certificate shall represent one share.

The stock certificate of this corporation is to bear the name of the holder.

If the shareholder sells or transfers this certificate to another person, the name shall be changed on the face of the certificate by regularly signed application to this corporation; and a fee of 5 sen will be charged for each certificate so changed.

If the stockholder should lose, tear or injure the certificate he can get another by application on explaining the reason of his request and having two or more sureties, who shall endorse his application.

In case the certificate is lost, a 30 days' public notice must be given, cost of which will be charged to the applicant, and a fee of 20 sen will be charged for each certificate so replaced.

No stock will be transferred during the 30 days preceding the stockholders' meeting.

DIRECTORS AND INSPECTORS.

Five directors and three inspectors shall be elected from among the stockholders who have more than 100 shares of stock.

The term of office shall be three years for directors and one for inspectors, and both may be reëlected.

The directors shall elect, from among their own number, a president and general manager.

Each director shall deposit 100 shares of stock with the inspector during his term of office.

When there is any vacancy among the directors or inspectors, provided there is the full number required by law, the vacancy may remain until the next meeting of the stockholders if the directors so desire. Any director and inspector elected to a vacant seat simply fills out the term of the director or inspector whose place he takes.

MEETING OF STOCKHOLDERS.

The stockholders' meeting shall be held twice a year—in January and July.

The president of the company shall act as chairman and preside at the stockholders' meeting. In case of his inability to preside, a director shall act as chairman in his place, and if there is no director to act as chairman, the chairman may be elected from among the stockholders present.

Whenever there is a tie vote at a stockholders' meeting, the chairman has the deciding vote.

The chairman has the right to adjourn a meeting or to change the place of the meeting.

SEMI-ANNUAL REPORTS.

The company must make a statement of its business each June and December, showing the net profits after subtracting all expenses and salaries of the officers and all losses from the gross profits of the preceding six months.

The salaries of the officers shall not exceed 10 per cent. of the net profit after subtracting all expenses.

(The value of a yen is about 50 cents gold, and that of a sen about half a cent.)

NEW TENNIS SHOE LISTS.

THE new price lists covering the tennis lines were sent out to the trade September 1 by the United States Rubber Co., the Lycoming Rubber Co., and the Goodyear's Rubber Glove Co., the last two being subsidiary companies of the United States Rubber Co. The list of the United States Rubber Co. is the most complete, giving prices, descriptions and illustrations of 12 different shoes mentioned in the list below. Net prices are as follows [last year's prices are noted in parenthesis]:

VACATION BRAND.*

[Extra heavy, red rubber soles.]

	Balmorals.		Oxfords.	
Men's	$1.25	($1.30)	$1.10	($1.15)
Boys'	1.20	(1.25)	1.05	(1.10)
Youths'	1.10	(1.15)	.95	(1.00)
Women's	1.15	(1.20)	1.00	(1.05)
Misses'	1.10	(1.15)	.95	(1.00)
Children's	1.05	(1.10)	.90	(.95)

YACHTING BRAND.*

[Leather insoles. Cartons.]

	Balmorals.	Oxfords.
Men's	$1.10	$1.00
Boys'	1.00	.90
Youths'	.90	.80
Women's	.95	.85
Misses'	.90	.80
Children's	.85	.75

NATIONAL BRAND.†

[Leather insoles. Cartons.]

[Red rubber soles. Black rubber soles 10 cents less.]

	Balmorals.		Oxfords.	
Men's	$1.00	($1.05)	$0.90	($0.95)
Boys'	.95	(1.00)	.85	(.90)
Youths'	.85	(.90)	.75	(.80)
Women's	.90	(.95)	.80	(.85)
Misses'	.85	(.90)	.75	(.80)
Children's	.80	(.85)	.70	(.75)

CHAMPION BRAND.†

[In bulk.]

	Balmorals.		Oxfords.	
Men's	$0.63	($0.70)	$0.53	($0.60)
Boys'	.60	(.64)	.50	(.54)
Youths'	.57	(.58)	.47	(.48)
Women's	.59	(.60)	.49	(.50)
Misses'	.52	(.53)	.42	(.43)
Children's	.49	(.50)	.39	(.40)

GYMNASIUM BRAND.

[Leather insoles. Cartons.]

	Balmorals.		Oxfords.	
Men's	$0.85	($0.88)	$0.75	($0.78)
Boys'	.75	(.78)	.65	(.68)
Youths'	.65	(.68)	.55	(.58)
Women's	.70	(.73)	.60	(.63)
Misses'	.65	(.68)	.55	(.58)
Children's	.60	(.63)	50	(.53)

BATHING SHOES.*

[In bulk.]

	SHOES.
Men's	$0.45
Boys'	.40
Youths'	.40
Women's	.40
Misses'	.40
Children's	.35

BASKET BALL SHOES.

[Pure gum, extra thick suction soles.]

	Balmorals.	
Men's	$3.00	($3.35)
Boys'	2.75	(3.00)

* White or brown duck.
† White, black or brown duck.
‡ White or black duck.

The most noticeable feature in these lists is the fact that several of the shoes are listed this year at lower prices than given in the last lists issued, which were sent out October 1, 1910.

The only difference in construction in any of these shoes appears in the Yachting bals and oxfords, where the rubber

NEW YACHTING OXFORD.

NEW YACHTING BAL.

foxing in the new line has been brought well up over the toe for additional protection, as shown in the illustrations herewith.

The prices in the lists of the Goodyear's Rubber and Lycoming conform with those in the list mentioned above as far as the shoes are similar in construction.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufacturers of india-rubber and gutta-percha from the United States for the month of July, 1911, and for the first seven months of five calendar years:

Months.	Belting Packing and Hose.	Boots and Shoes.	All Other Rubber.	Total.
July, 1911	$172,782	$231,561	$520,557	$924,900
January-June	1,117,633	696,083	3,641,938	5,455,654
Total, 1911	$1,290,415	$927,644	$4,162,495	$6,380,554
Total, 1910	1,218,628	1,013,834	3,273,268	5,505,730
Total, 1909	996,859	637,090	2,393,563	4,027,512
Total, 1908	714,125	656,333	2,120,145	3,490,603
Total, 1907	795,965	694,075	2,352,870	3,842,910

The above heading "All Other Rubber," for the month of July, 1911, and the first seven months of the current year, includes the following details relating to Tires:

Months.		For Automobiles.	All Other.	Total.
July, 1911	*values*	$218,883	$30,455	$249,338
January-June		1,245,177	306,675	1,551,852
Total, 1911		$1,464,060	$337,130	$1,801,190

SHIPMENTS TO NON-CONTIGUOUS COUNTRIES.

For the fiscal year ended June 30, 1911:

Territories.	Belting Packing and Hose.	Boots and Shoes.	Tires.*	All Other Rubber.	Total.
Alaska	$61,276	$156,590	$826	$19,400	$238,092
Hawaii	60,152	17,249	190,079	70,493	337,973
Porto Rico	12,017	1,052	119,256	110,512	242,937
Philippines	106,206	6,487	197,580	87,079	397,352
Total, 1910-11.	$239,651	$181,378	$507,741	$287,484	$1,216,354
Total, 1909-10.	176,070	222,037	.....	392,114	790,221
Total, 1908-09.	190,908	194,976	.....	264,722	650,606
Total, 1907-08.	162,602	235,044	.....	217,801	615,447
Total, 1906-07.	197,508	215,630	.....	167,488	580,626

*Included in "All Other Rubber" prior to July 1, 1910.

NEW TRADE PUBLICATIONS.

THE Michelin Tire Company (Milltown, New Jersey) has just added another guide book to the number already issued covering European countries. This latest book is called the "Guide to the British Isles." The company has now issued a guide book of practically every European country at all affected by tourists. These guides are very useful to Americans doing Europe in a car.

The Firestone Tire and Rubber Company (Akron, Ohio) has just issued a book of instructions covering the use of tires, the application of side wire, internal wire and cushion tires. The book is illustrated and full of interesting information.

The September number of "R-U-B-B-E-R," published by the Beacon Falls Rubber Shoe Co. (Beacon Falls, Connecticut), is like its predecessors a judicious compound of advertising for the rubber footwear made by that company and humorous skits and sketches. Not at all a bad way to advertise—mixing the exploitation of your goods with just enough humor to keep people reading.

The Luzerne Rubber Co. (Trenton, New Jersey) issues a catalogue entitled "Hard Rubber," which is a little book of 16 pages with cover, printed in black with sepia background on high grade paper. The catalogue illustrates the various goods made by the company—battery jars, rings, knobs, handles, discs, fountain pen stock, etc.

The H. W. Johns-Manville Co. is distributing its new electrical supplies catalogue No. 15, which contains over four hundred pages, and illustrates and describes the electrical products of the company. The catalogue is very attractive in design and contains many new additions to its already extensive line of electrical supplies, among which should be mentioned: "J-M" fibre conduit, for telephone, lighting, railway and electrical purposes; "J-M" linolite system of illumination for general lighting, third rail insulators, high tension porcelain insulators, incandescent lamps and lightning arresters. A new solder known as "Solder-all" is also described, consisting of a non-corrosive flux, in collapsible tubes. The catalogue is well arranged and completely indexed, making it easy to locate any article quickly.

The Republic Rubber Co., Youngstown, Ohio, is sending out a colored cut-out folder, printed by the four-color process, the front page of which shows a man and a woman in an automobile going around a narrow ledge over a beetling precipice and having every appearance of being a very hazardous undertaking. The ledge is not only narrow but the road is badly broken. From the general appearance of things you would say the man could not make it and that the couple were in a tight place. The second page of the folder, however, shows that the venture was successful and the automobile is speeding on. It is still, however, clinging to narrow ledges with towering peaks above and sheer decents below. This folder is intended to show what can be done with the Republic Staggard tread tires. It is a good piece of advertising.

INDIA RUBBER DOUGH.

Sometimes it is called "Tire-doh," often "Fix Tire," occasionally "Rubber Tread," frequently "Tite-Wad," oftentimes "Rubber Putty." It is really a thick self-vulcanizing cement which when crowded into a wound in a tire vulcanizes itself.

An American Consul in Great Britain reports that a business house in his district engaged in the manufacture of neckties, wants to get into communication with American manufacturers of suspender webbings.

The American Consulate at Rangoon, Burma, would like to be supplied with catalogues of American plows, especially bush plows, for use on rubber plantations.

OVER TEN MILLION PAIRS OF RUBBER HEELS A YEAR.

IT is computed that there are ten and a half million pairs of rubber heels worn in the United States each year. As each person who has the rubber heel habit is likely to wear out two pairs this would seem to indicate that the actual number of

O'Sullivan Rubber Heel.

Foster Rubber Heel.

rubber heel wearers is about five and a quarter million or about 6 per cent. of the entire population. The most popular heels are the O'Sullivan, Foster, Morgan & Wright, Bailey and Converse. Mr. Humphrey O'Sullivan has probably been most instrumental in the popularization of the rubber heel. As an il-

Bailey's "Won't Slip" Rubber Heel.

lustration of the systematic and persistent work he has done in this direction the following incident might be cited: A few years ago a member of The India Rubber World staff chanced upon Mr. O'Sullivan in Cleveland, and asked him what he was doing there. "Well," said Mr. O'Sullivan, "I find that Cleve-

"Friction Plug" Heel.

"Can't Slip" Rubber Heel.

land is only using half as many rubber heels as Buffalo. Now Cleveland is a third larger than Buffalo and ought to be wearing four-thirds as many rubber heels as Buffalo, and I am out here to see why it isn't." Undoubtedly Mr. O'Sullivan found out and forthwith remedied the situation.

MOTORCYCLE TIRES.

THE wonderful expansion in the manufacture of automobile tires has been so spectacular that it has overshadowed tires for other purposes. It is not generally appreciated but the bicycle is still much used and tires are constantly manufactured for it.

United States Tire Co.

Continental-Erie Tire.

Diamond Motorcycle Tire.

Vacuum Cup Non-Skid Tire.

Goodyear "Pathfinder" Tire.

Special T. T. Tire.

Kelly, Racine.

The B. F. Goodrich Co.

Fisk Premier Toughtread Tire.

"Kokomo" Dotted Tread Tires.

Stimulated by motorcycle racing and by the very considerable use of the motorcycle, there are demands for a large number of motorcycle tires. They must be of special construction and rank in size about half way between the bicycle tire and the small motor tire. All of the leading automobile tire manufacturers make them and the appended illustrations give a good idea of their external appearance.

LARGE EXPORTS OF TIRES FOR THE PRESENT YEAR.

Figures given out by the Bureau of Statistics, Department of Commerce and Labor, show that up to the present time the exports of tires for 1911 have amounted to the value of 1½ million dollars. It is estimated that at this rate the exports for the year will reach the 2½ million mark. This is a very interesting fact when we consider that only ten years ago, in 1901, the total value of exports of automobiles and all their accessories was less than 1 million dollars. In fact, as late as 1905, the entire value of automobiles, including accessories and tires exported, only reached 2½ million dollars. The value of all automobile exports, including all accessories for the present year up to the middle of September, amounts to 12½ million. At the same rate for the year, the total will reach the 20 million dollar mark. This does not include the million and a half value of exports to the American possessions—Porto Rico, Hawaii and Alaska. Canada is the largest consumer of our automobile exports, about 40 per cent. of the machines sent out of the country going over the Canadian border. The distribution of these exports is rather interesting. It it as follows:

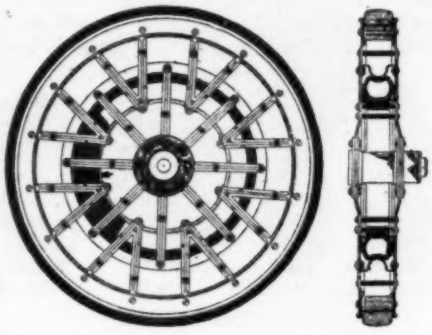
Of the practically 9 thousand machines exported in the seven months ending with July, 3,724 went to Canada; 1,875 to the United Kingdom; 938 to British Oceania (chiefly Australia and New Zealand); 477 to Asia and Oceania other than British; 444 to South America. 273 to France; 175 to West Indies and Bermuda; 147 to Mexico; 137 to Italy; and 73 to Germany. These figures do not include the shipment to non-contiguous territory of the United States, the number sent to Hawaii in the seven months in question being 202; to Porto Rico, 154; and to Alaska, 2.

HOW MANY AUTO TIRES FOR 1912?

It is estimated that there are about 500,000 automobiles of every description, now owned and operated in the United States, and that this number will be increased by probably 100,000 the coming year—making in use before the end of 1912, something like 600,000 cars. It is an interesting speculation as to how many tires that number of vehicles will call for. It is probably safe to estimate, that on an average, these cars, big and little, will use eight tires during the year, which will give the tire manufacturers a home market of something like 4,800,000 tires. If this estimate holds good, and prices remain where they are, tire manufacturers will not have much ground for complaint during the coming year.

A NEW PNEUMATIC SUSPENSION WHEEL.

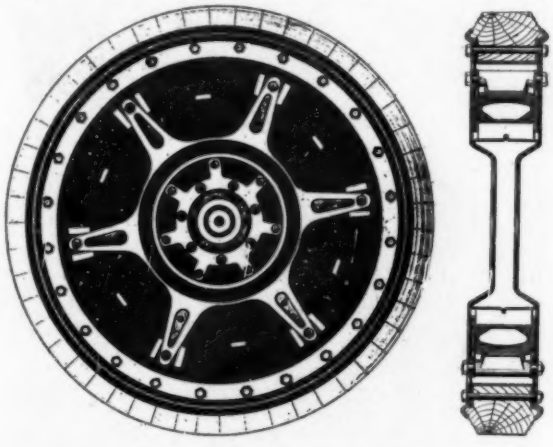
FIVE years ago a pneumatic iron tire was brought out and put on the market intended for heavy trucks and sight-seeing autos. The general principle of the wheel was that it was made in two parts, an inner wheel and an outer wheel, and between the two, about eight inches from the extreme rim, was



Rutherford's Iron Tire Pneumatic Wheel.

a pneumatic rubber tube. This wheel did not make any great progress towards general adoption, but the principle on which the wheel was operated has been the subject of a great deal of thought among inventors since that time. As a result of this a new auto wheel called the Pneumatic Suspension Wheel, and made by the Pneumatic Suspension Wheel Company, of Stamford, Connecticut, has recently been thoroughly tested on 30 heavy motors in New York and Brooklyn, some of the trucks weighing as much as 12 tons.

This wheel also consists of a wheel within a wheel, an inner pneumatic tube within a rubber shoe being placed between the two parts of the wheel. Steel plates and spokes keep this rub-



Pneumatic Suspension Wheel.

ber tube rigidly in position. It is claimed that this new wheel distributes the weight over two-thirds of the rubber tire instead of having it fall directly on the one point of contact. If this new wheel is a success, and it seems to have been thoroughly tested, it will be possible for the heaviest trucks to enjoy the advantage of pneumatic tires. The actual tire on this new wheel is composed of sectional wooden blocks, five inches deep, made of rock elm, and said to be capable of running 1,500 miles without the necessity of replacement. Side view and sectional view are shown in the accompanying cuts.

SCRAP RUBBER AND THE 10 PER CENT. DUTY.

To the Editor of The India Rubber World:

THE scrap rubber trade of this country has of late been greatly disturbed in the execution of its peaceful calling by the inquisitorial activity of the United States Customs Department.

A number of consignments coming from abroad have been held up at the piers and submitted to the most minute examination, thus often delaying their delivery into the hands of the consignees for several weeks and inconveniencing practically the whole of the reclaimers' and rubber manufacturers' trade.

The fundamental reason for these vexatious proceedings is to be looked for in the wording of the customs tariff, which runs as follows:

> No. 479. Waste, not specially provided for in this section, ten per centum ad valorem.
>
> No. 591. India rubber, crude, and milk of, and scrap of refuse India rubber, fit for re-manufacture, and which has been worn out by use, to enter free.

Up till a few months back, every importer paid willingly 10 per cent. duty on all parcels of new scrap which he imported, and all other consignments were passed by the Customs free of duty. Of late, however, the Treasury Department has thought it advisable to submit the latter consignment to a closer inspection which, on the face of it, would not have disturbed anybody in the trade, as old rubber is always sold separately from the new. This, of course, is only reasonable as the rubber reclaimers often pay a fraction of a cent more for the latter, it being clean and ready for the machine, while the old scrap has to be submitted first to an expensive sorting and cleansing process. By going through the old scrap, the custom house authorities have now decided that any scrap which does not show actual signs of deterioration by use—even if it is made useless for its originally intended purpose by mechanical means, such as tearing or cutting up—must be classed as new scrap and 10 per cent. ad valorem duty paid on it, and they have even claimed this in some instances on the whole of the shipments, which, in their idea, contained new scrap. Now anyone who has the slightest knowledge of the grading of scrap knows that a good many articles, although used for years, might not show any outer signs of wear, as for instance, gas-piping, bottle rings, pump-washers, flanges, hard rubber goods, motor inner tubes, bicycle inner tubes, etc., etc. Some of these must be scraped for hygienic, others for mechanical reasons, and we repeat, would not show any signs of previous use.

There is no question of a doubt that these paragraphs were not originally intended to penalize the whole of the rubber trade, but that the wording of same has been misconstrued in a way which hampers the manufacturer, reclaimer and dealer alike in an unheard-of manner.

It is intended to bring this matter before Congress next session and to do everything to abolish these vexatious impositions.

We must have foreign scrap, if our manufacturers would not lose their position in the world's trade and we must have it enter free of duty whether it is rendered unfit for its originally intended purpose by use or by other means.

A powerful firm of attorneys has already been retained to take up this question at Washington and it is hoped that the whole of the scrap rubber trade, all india-rubber manufacturers and reclaimers will join hands. Several important firms have already expressed their willingness to give every assistance, but it is necessary that everybody in the trade should help and thus bring about the looked-for change. W. F. P.

Send for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."

New Rubber Goods in the Market.

ONE PIECE MOTOR TRUCK TIRE.

THE Republic motor truck tire is made of one piece of rubber, the tread and base being inseparable. The base is made to conform to the inside of the clincher flanged rim though somewhat wider than the inside of the rim.

THE REPUBLIC MOTOR TRUCK TIRE.

Cross wires are inserted through the base of the tire, about 1½ inches apart, for the purpose of stiffening the base and giving it rigidity and preventing the tire from pulling out of the rim. To increase the durability of the tire a strip of rubber harder than the tire compound is laid lengthwise through the center of the base and vulcanized securely to the base. The transverse wires pass through this hard strip which supports them and prevents them from being displaced under excessive strain.

Several layers of heavy frictioned fabric are placed about the entire base, completely covering the ends of the cross wires. This fabric helps to stiffen the base of the tire, resisting the wear caused by friction with the rim, and prevents the cross wires from coming in contact with the clincher flanges. [The Republic Rubber Company, Youngstown, Ohio.]

MOTORCYCLE LAMP COVERS AND WIND SHIELD.

EVERYBODY who uses a motorcycle will concede that it is a good idea to have the lamp covered, as it keeps it clean and in better burning order. The Nathan motorcycle lamp cover, made of

NATHAN'S MOTORCYCLE LAMP COVERS.

rubber covered cloth, is made for every style and description of motorcycle lamp.

A hand shield to keep the wind from rushing up the sleeve is a *desideratum* for the motorcyclist in cold weather. The Nathan

NATHAN'S HAND WIND SHIELD.

hand wind shield is devised to serve this purpose. [Nathan Novelty Manufacturing Company, Nos. 84-90 Reade street, New York.]

LAMP COVERS THAT FIT.

THE ordinary loose fitting lamp cover, which is nothing but a bag to tie round the lamp, is very likely, when taken off, to be thrown on the floor or in odd corners and is liable to get so soiled that it really doesn't contribute very much to the cleanliness of a lamp. A tight fitting cover made especially for a lamp

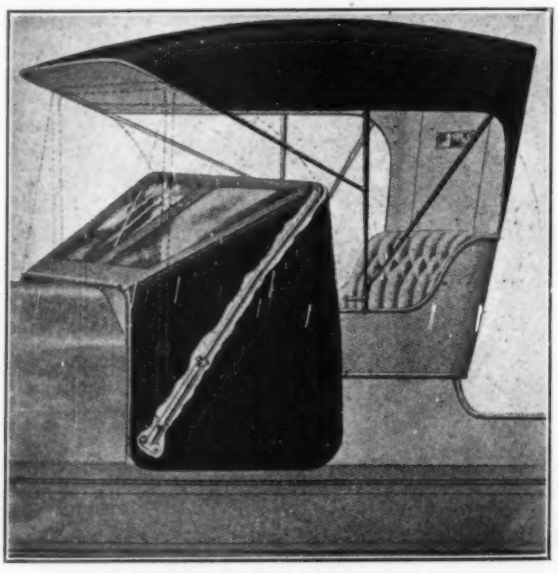
CLOSE FITTING LAMP COVERS.

is likely to receive better treatment and for that reason serve its purpose much more efficiently.

The Hopewell lamp covers are made of fleece-lined rubber cloth and are made to fit the lamp for which they are designed. They are made in four different styles—square side, round side, tail and search as shown in the accompanying cuts. [Hopewell Brothers, Newton, Massachusetts.]

SOMETHING NEW IN WIND SHIELDS.

THE cut shows a new top shield which is made of fiberloid and carriage cloth and attached at the base of the front part of the dash of the car, and supported at the top by a yoke-shaped frame, which is hinged at the base over a plunger lock. This



AN ADJUSTABLE WIND SHIELD.

enables the wind shield to be pushed forward and locked in an upright position. The advantages of this shield are, that it is adjustable, can be raised or lowered to meet the driver's line of vision, and can be readily removed from the car, simply through the loosening of two tension nuts. [Springfield Harness Co., Springfield, Massachusetts.]

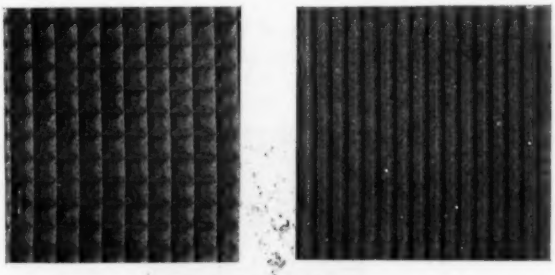
THE GOODRICH TENNIS BALL.

THE Goodrich Champsionship 1911 tennis ball has been approved by the United States National Lawn Tennis Association for use in all championship tournaments of every description, and its manufacturers have guaranteed that it will meet the associa-

tion requirements in regard to size, weight and bound. This ball is made entirely at the Goodrich factory, which gives it uniformity of construction. [The B. F. Goodrich Company, Akron, Ohio.]

LIN-RHUBER FLOORING.

LIN-RHUBER is the name of a new flooring intended for automobiles, running boards, motor boats, and is said not to be affected by gasoline, oil or grease. This flooring is made in any



AUTOMOBILE FLOORING.

desired color and in various patterns, two of which are here shown—one showing a check pattern, the other being in parallel lines. [The Nairn Linoleum Co., Newark, New Jersey.]

A NEW SPORTSMAN'S JACKET.

THE "Kan't-Leak" garments for hunting, fishing and camping are very generally used. They cover hunting coats, vests, trousers, automobile and motorcycle suits, together with jackets and

"KAN'T-LEAK" HUNTING JACKET.

bloomers for women. The illustration shows a waterproof hunting jacket. [Richard E. Hill & Son, 16 Boyden place, Newark, New Jersey.]

TANK FOR TESTING LEAKY TUBES.

THE Dover testing tank is made of heavy steel, of double-seamed construction, and galvanized after it is completely made so as to render it rustproof. It has a rod furnished with an

NEW DOVER TIRE TESTING TANK.

adjustable clamp, which holds the tube in position, and can be adjusted to conform with the size of the tube. The clamp on the rod is placed at the proper height, the tank is filled with water, and then the tube is turned until air bubbles show the leak. [Dover Stamping and Manufacturing Co., Cambridge, Massachusetts.]

INDICATOR TO SHOW GASOLINE CONSUMPTION.

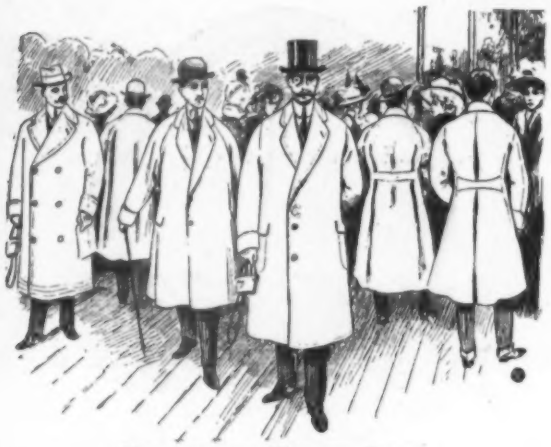
THIS illustration shows a device simple but effective for measuring the quantity of gasoline that is used in driving a car. It is called The Jarrott "M. P. G." indicator, the initials meaning miles per gallon. The rubber tube shown under the graduated

JARROTT "M. P. G." PETROL INDICATOR.

scale is attached to the carbureter, which for the time being is detached from the tank. The vessel on which the graduated scale appears is filled with gasoline, then its consumption for a given mile is shown on the graduated scale. The indicator is easily attached and has no delicate parts to get out of order. [Chas. Jarrott & Letts, Limited, London, England.]

NEW STYLES IN MACKINTOSHES FOR MEN.

It will be discovered by a glance at the scene below, taken from a French fashion journal, that the well-dressed Parisian, as he promenades the boulevards this winter, will equip himself on



New Parisian Walking Coats.

rainy days with a storm coat hanging fairly long and very full, with a wide, low-cut collar, and decidedly sloping shoulders.

The two single figures also reproduce new Paris styles, showing what the proper equipment for the motorist will be, both coats being long and very full, and one having a cape to cover the head.

Parisian Motor Coat.

Parisian Motor Coat With Cape.

A SELF-FILLING FOUNTAIN PEN.

The "Independent" self-filling fountain pen is made of polished hard rubber, both holder and cap. The gold pen is 14-karat gold, tipped with iridium. The self-filling device is very simple. The knob is unscrewed the full length of the thread, pressed down flush with the barrel. The nozzle of the pen is inserted in the

The "Independent" Self-Filling Fountain Pen.

ink, pressure on the knob is then released and the pen fills. The knob is then screwed down tight to the barrel and the pen is ready for use. It is cleaned by the same process, substituting water for ink. The "Independent" has an unusually large ink capacity. [J. Ullrich & Company, Thames building, Thames and Greenwich streets, New York.]

THE PRESTO COLLAR.

The Presto collar, which appears on women's storm coats, is, as its name suggests, one that can be quickly changed from one position to another. It is shown in the accompanying sketch,

The Presto Collar.

first, turned down, as it would be worn in fair weather, and then turned up around the neck as it would be in a storm. [New York Mackintosh Co., New York.]

WATERPROOF SKIRTS.

There are many lady motorcyclists and for them particularly, as the sport is becoming more and more popular, special clothing has been designed. The illustration shows a tailor-made

"Aurora" Motorcycle Skirt.

skirt of waterproof cloth, sold under the Aurora brand. [Wilson Weather Coat Co., Aurora, Illinois.]

RUBOILIN FOR COVERS AND APRONS.

A material that is "one-half the price of rubber cloth and absolutely proof against gasoline, oils and grease," ought certainly to be useful in a good many ways—provided it is as waterproof, light and pliable as rubber cloth—for rubber cloth certainly is affected by gasoline, oils and grease. But the statement quoted above is the claim the manufacturers make for Ruboilin for use in auto tops, coats, covers and upholstery, and especially for aprons. [The Ruboilin Co., 253 Broadway, New York.]

THE RUBBER TRADE IN SAN FRANCISCO.

By a Resident Correspondent.

IT is the general opinion that business should be somewhat better than it is at the present time before it could be said to be really good. There seems to be a steady, but not lively business, and in spite of the fact that the merchants are not seriously complaining they nevertheless would be pleased to see greater industrial activity and a bigger demand for goods. It being just prior to the mayoralty election in San Francisco, perhaps there has been some checking of business activity on that account, and if so, the cause will soon be removed, as the primary election will be held this month. With that over, and the breaking of first ground for the World's Fair of 1915 to take place next month, there should be a rapid development of commercial activity from that time on.

* * *

The Goodyear Rubber Co. report that they are busy now getting out their fall orders of boots and shoes, and they hope for plenty of rain so the trade can dispose of the stock and re-order again. Nobody wants to see a repetition of last year, when the rains held off until along in January. The rains have already started in the northern counties and further up the coast, and the firm confidently looks for a good season there.

* * *

R. H. Pease, Sr., president of the Goodyear Rubber Co., is away on a yachting cruise with John D. Spreckles and party, in the fine steam yacht owned by Mr. Spreckles. The cruise will include Santa Barbara, San Diego and all points of interest along the southern coast.

* * *

Mr. Lewis, of the Pennsylvania Rubber Co., is expected to arrive soon for a visit to the local house.

* * *

The Panama Rubber Co., located on First street, near Howard, which bought out the factory of the Phoenix Rubber Co., is now contemplating selling out to a Los Angeles rubber merchant.

* * *

The Quaker City Rubber Co.'s line, formerly handled by L. L. Torrey, of San Francisco, is now carried by Mr. Harris, who was sent out to San Francisco from the factory to succeed him. Mr. Torrey was formerly manager for the Pennsylvania Rubber Co.'s San Francisco branch.

* * *

Much concern and sympathy is being expressed by the friends of Mr. W. R. Pierce, who is now lying quite sick in the East. Mr. Pierce is now with the Cleveland Mechanical Rubber Goods Co. He was formerly manager for the Revere Rubber Co.'s branch in San Francisco.

* * *

Local houses are taking considerable interest in the fact that Seattle, Washington, is now in the market for 20,000 feet of hose. The specifications were such that the hose would go to the lowest bidder. The bids were opened September 1, and were as follows: The Fabric Fire Hose Co., net per foot, 75 cents; the American Rubber Co., 69.75 cents; the Diamond Rubber Company, 68 cents; the Gorham-Revere Rubber Company, .679 cents; the Eureka Fire Hose Manufacturing Co., .67 cents; the Caldwell Machinery Co., .61 cents; the Bowers Rubber Works, .59 cents; the Pacific Coast Fire Supply Co., .58 cents. After due consideration, however, the board in charge decided to reject all bids, and it is understood that they are going to so word the next advertisement for bids as to admit of a better quality of hose. It occurred to the officials in Seattle that they have been buying a good deal of hose recently, and on comparing notes with other large cities, they find that they have been buying much more than other cities in proportion to their needs. They decided that it might be their demands did not permit of a hose that would have the desirable lasting qualities and their next bids will be more in conformity with the quality demanded by other large cities of the coast.

Mr. A. H. Gregory, representing the New York Belting and Packing Co., has just returned from an extensive trip through Alaska. He found that the demand for rubber merchandise at the present time is on the decline in that territory. Owing to the fact that much of the mining country has been placered out, there are vast areas of worked out and deserted claims, so that the people have left many towns that were once thriving. In Dawson he found 70 per cent. of the residence section deserted, and the merchants leaving in large numbers. He gives Fairbanks three years more probably before its placer mines are worked out. Nome is in better condition, because preparations are being made there for dredger mining. The fact that big companies now control most of the mines has tended to reduce the population, as they employ as few men as possible. On the whole the rubber business in Alaska is on the decline.

* * *

The Bowers Rubber Works have just completed a new building at the factory for the moulded rubber hose. They have purchased considerable new equipment, so that the capacity for turning out moulded rubber hose will be increased 50 per cent. this year.

* * *

J. H. Russel, Jr., representing the H. B. Sherman Manufacturing Co., of Battle Creek, Mich., is now visiting the San Francisco trade.

* * *

E. S. Allen, representing the W. D. Allen Manufacturing Co., of Chicago is now visiting the merchants of this city.

* * *

W. L. Eaton, with the New York Belting and Packing Co., is about to start for his vacation at Klamath Lake, where he expects to enjoy some fine sport at fishing.

* * *

Mr. Rigdon, with the Gorham-Revere Rubber Co., has returned from his tour of the eastern factories where he was studying conditions and getting himself in touch with the newest things in the East.

* * *

The Pennsylvania Rubber Co. report that the vacuum cup tires which they are now for the first time placing on the market for bicycle and motorcycle use, are meeting with immediate success.

* * *

The local rubber manufacturers' association has called a meeting to be held tomorrow, more for the purpose of socially getting together than anything else.

* * *

The city of San Francisco, when it last purchased fire hose laid down rules of its own as to how the hose should be built. All but two of the rubber houses refused to bid according to the requirements. Of the two, the lowest bidder got the order, and it now develops after a test having been made of the hose he produced, that 3,600 feet are defective and will have to be replaced. This is unsatisfactory business to all concerned.

GETTING THE MOST OUT OF TIRES.

A great many people will recall the straight shoes they used to wear in childhood that were worn on the left foot one day and on the right foot the next, so as to get the greatest possible amount of wear out of the shoe. There are a great many straight-last rubber boots worn today for the same reason; and it appears that the same principle works equally well in tire service. It has been found that the tires on the right side of the machine are worn out more rapidly than those on the left side, owing to the fact that the right side tires strike the curb more frequently, and on country roads have to run over the rough ruts when the machine is turning out to pass another conveyance. So if the right side tires, after they become somewhat worn, are shifted to the left side the wear is equalized. A further distribution of wear can be effected by changing the front and rear tires, as the greater weight falls on the rear tires.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE Firestone Tire and Rubber Co. is rearranging the machinery in the old and new factories, and completing plans which this company has been working on for the last two years. They are also improving the space between the factory buildings and the main road, which is practically 600 feet long and 300 feet wide, by placing convenient drives, walks and lawns in this space.

During the first week in September, the annual salesmen's conference was held at the factory. The study covered practically a week, the meetings occupying two days. Part of the instruction was given by A. J. Litch, an expert in advertising.

The Goodyear Tire and Rubber Co. have planned for an extensive rearrangement and extension of their factory. This consists of moving much machinery and the enlarging of the tire department in every way. Ultimately, it will necessitate the building of new buildings. The present machinery will almost all be rearranged, and will be placed more compactly, conveniently and systematically, and some new machinery will be placed in the factory to eliminate labor. One of the new machines will do the work of several of the old ones. This rearrangement has been in contemplation for some time and the rapid growth of the company's business has necessitated the change between this year's work and next year's work. This change will necessitate the closing of part of the factory for one or two weeks so that the alterations can be made without any hindrance. The company hopes by these changes and additions to be able to manufacture in the neighborhood of 3,500 tires per day.

SALESMEN OF THE FIRESTONE TIRE & RUBBER CO., AKRON, OHIO, ON THE STEPS OF THE NEW FIRESTONE PLANT.

The photograph reproduced above shows a hundred members of the selling force of the Firestone Tire & Rubber Co., and was taken in front of the company's plant in Akron, which includes an enormous tire building having ten acres of floor space all under one roof.

The salesmen were shown through the new factory, impressing upon each the care, preparation and painstaking effort and saving that is put forth upon each step of the tires manufactured in order to bring about the best result through system, economy, thoroughness and durability. The work of the year was thoroughly analyzed and suggestions for the ensuing year's business and plans for bringing these suggestions to fruitage were dwelt upon. The meeting ended with a banquet served by 125 girls of the office force in the new dining room of the factory. The tables were in the form of the capitals "F" and "T."

The large dam being built by this company had a severe test during the recent rainfall of four inches in twelve hours. Part of the embankment was damaged.

* * *

The Swinehart Tire and Rubber Co. is running day and night. The annual meeting of the stockholders of this company was held at the offices of the company, Monday, September 18, at one o'clock. The company's business shows an increase over the previous year of 20 per cent., and the prospects for the coming year are very good.

The following were elected directors for the ensuing year: August Blessman, R. A. May, Thomas F. Walsh, Joseph Dangel, E. L. Mather, William McWeldon and W. W. Wuchter. After the stockholders' meeting the board was organized and the fol-

lowing officers elected: W. W. Wuchter, president and general manager; Joseph Dangel, vice-president; C. O. Baughman, secretary; R. A. May, treasurer.

The company increased its capital stock from $400,000 to $800,000, all of which money is to be invested in the business. The company has not been able to supply the demand for tires. An automatic sprinkling system has recently been installed as well as a new telephone system. The office has been enlarged and rearranged, making the rooms more convenient.

The solid tire business continues steady through the four seasons and the company is making a special effort to equip all kinds of fire apparatus and all types of commercial cars.

* * *

The American Tire and Rubber Co., of Akron, Ohio, organized under the laws of Ohio, October, 1910, has a capital stock of $200,000, all common, $100,000 of which has already been paid and another $100,000 is being issued for working capital. The

American Tire and Rubber Co., Akron, Ohio.

officers of the company are as follows: Adam Duncan, president and treasurer; Gilbert C. Waltz, vice-president; F. L. Kryder, secretary. The directors are: Adam Duncan, Gilbert C. Waltz, E. L. Kryder, Harvey Musser, Gustavus Seiberling, C. M. Wertz, Frank Miller, F. E. Rowe and L. C. Henderson.

The company owns the above factory and site of three acres located along the B. & O. and Northern Ohio Railroads, within a half mile of the center of Akron. The factory building is completed and machinery and equipment are now being installed. The factory is practically fireproof and covers about 25,000 square feet floor space. They will manufacture a complete line of inner tubes, repair stock and casings. Later they expect to exploit patents which they now hold for demountable and solid tires and may also reclaim rubber under a special process of their own. The officers expect to have the company in full operation within sixty days.

* * *

The board of directors of The Portage Rubber Co., at its regular quarterly meeting voted to purchase new equipment for tire making. They expect to increase their capacity to 100 tires per day. They will install a sprinkling system as well as a new pumping plant. The quarterly dividend was declared at this meeting and O. S. Welty of Canal Dover was elected a director.

* * *

The present condition of the rubber trade in the Akron factories has shown an increase in business over other years, and the fall trade especially has continued strong, the Diamond, Goodyear, Firestone, Swinehart and B. F. Goodrich running day and night, and the other factories are busy. Mr. E. C. Tibbetts of the B. F. Goodrich plant accounts for this long sales season by the fact "the owners of cars, even the small ones, are making them do more work than formerly. The runabouts are touring the country more than before, and our business men are using their machines all through the year; also the aggregate number of cars in use is greater year by year, each of which has its effect on the volume and continuity of the tire business."

* * *

J. F. Singleton, advertising manager of The Firestone Tire and Rubber Co., has just returned from a trip through Europe. He says that there are few cars in Europe compared with the number in the United States, and the European cars are chiefly of expensive design, few low-priced cars being found. On the other hand, the motor truck business in Europe has far outstripped the motor truck business in this country and the trucks are mostly equipped with tires of French or German manufacture. The roads in Europe are, as a general rule, in good condition and the taxi-cab service there costs about one-fifth of what it costs here. He says that the best way to see Europe at the least expense is by touring in an automobile, as the roads are good, a person can see places of interest at his leisure, and can put up at many of the first-class smaller hotels which are good and not expensive. Mr. Singleton says that the advertising possibilities in Europe are great and that the lack of advertising along rubber lines at present gives a great field in that direction.

* * *

Mr. John C. Gibson has ceased to take an active part in the management of The Royal Rubber Co., and at present is handling and manufacturing a line of soft rubber goods.

* * *

The Faultless Rubber Co. of Ashland, Ohio, during the last year have increased the size of their plant, adding a large three-story addition.

* * *

Mr. H. W. French will move his office from 410 Flatiron Building to Rooms 713 and 714, Second National Bank Building. He has furnished a commodious suite of rooms with an elaborate sample room in which he will keep all known samples of rubber now on the market.

* * *

James A. Thompson, formerly with The Hartford Rubber Works Co., has charge of the Philadelphia branch of The Swinehart Tire and Rubber Co., and J. J. O'Connor has the agency for their tires in Bridgeport, Conn.

* * *

The Moore Architectural and Engineering Co. have organized with Mr. F. R. Moore, president and general manager; C. S. Heller, vice-president; M. C. Peck, secretary and C. E. Fasnight, treasurer. Mr. Moore has for the last six or eight months been operating a reclaiming plant. The apparatus is new and of his own design and the process is entirely new. The time covering the entire process is less than twelve hours. The apparatus is 8 horsepower and for agitation purposes he claims it will do the work of a 35-50 horsepower motor, used under present methods. He claims that his process will devulcanize all grades of rubber in less time and at less expense than the old processes.

The subject of rubber paving for streets was referred to by several of the speakers at the recent Rubber Exhibition in London, as likely to have an ultimate effect on the demand for rubber. Rubber pavement is not new in London. When the St. Pancras Hotel was built in 1876, it was necessary to provide a roadway under it leading to the busy St. Pancras railway station. To prevent annoyance to hotel guests, this roadway was paved with rubber, and it lasted for thirty years before any renewal was necessary. Under similar conditions, a roadway was laid under the Euston Hotel, in 1881, to the Euston station, and after twenty-one years' use it was found that only at the points of greatest wear had the original thickness of 2 inches been reduced to 1¼ inches. In both instances the traffic on the roadway was constant and heavy.

News of the American Rubber Trade.

THE PLYMOUTH RUBBER CO.'S NEW PLANT.

The Plymouth Rubber Co. (Stoughton, Massachusetts), is pushing as rapidly as possible the building of its new plant in Canton. The last building, which is of brick construction, measuring 80 x 184 feet, and three stories high, is nearly completed. The company expects to move into this new plant in about four months' time; meantime occupying its Stoughton plant.

DIELECTRITE—A MOLDED INSULATION.

This is an invention by Gray Staunton. The claims made for it are as follows: That it resists high temperatures without softening; is impervious to moisture and oils; is not effected by alkalies or dilute acids; is not brittle; is mechanically hard and tough; can be molded in any form, even with threads; is not injured by ozone and has great tensile strength. It is manufactured by the Staunton Dielectrite Rubber Co., Muskegon, Michigan.

THE ELECTRICAL EXPOSITION OF 1911.

The Electrical Exposition, which will be held in the Grand Central Palace, New York, from October 11, to the 21st, next, is expected to be the largest and most complete exhibit of electrical appliances ever seen in this city. It will show electrical apparatus of every kind, and be in operation both day and night.

THE SECOND ANNUAL ELECTRIC VEHICLE SHOW.

The Electric Vehicle Association of America will hold its second annual convention in New York, on October 10, the convention being held at the same time and the same place, namely, the Grand Central Palace, as the Electrical Exposition.

A great many important papers will be read during the convention referring to electric vehicles, storage batteries, and other important accessories of the electric vehicle. Papers will be read at that time on "Electrical Vehicle Commercial Problems," by L. L. Lloyd and John Meyer, of the Philadelphia Electric Company; E. S. Mansfield, of the Boston Edison Company; and E. W. Curtis, Jr., of the General Vehicle Company. J. G. Henninger, of the National Electric Lamp Company, of Cleveland, Ohio, will contribute a paper on "The Proper Equipment and Lighting for an Electric Garage."

One entire floor of the Grand Central Palace will be devoted to the demonstration of various electric vehicles on a track provided for that purpose.

AUTOMOBILE SHOWS FOR THE COMING SEASON.

Six automobile shows have been announced for the coming season. Of these five will take place in New York, three of them in Madison Square Garden, and the other two in the Grand Central Palace. The sixth show will be given in the Chicago Coliseum. The different exhibits with their dates are given below.

Jan. 1-5, 1912.....New York City, Grand Central Palace, Annual Show, Automobile Manufacturers' Association of America.
Jan. 6-13.....New York City, Madison Square Garden, Twelfth Annual Show, Pleasure Car Division, Automobile Board of Trade.
Jan. 10-17.....New York City, Madison Square Garden, Annual Show, Motor and Accessories Manufacturies.
Jan. 10-17.....New York City, Grand Central Palace, Twelfth Annual Show, National Association of Automobile Manufacturers.
Jan. 15-20.....New York City, Madison Square Garden, Twelfth Annual Show, Commercial Division, Automobile Board of Trade.
Jan. 27-Feb.10.....Chicago Coliseum, Eleventh Annual Automobile Show under the auspices of the National Association of Automobile Manufacturers.

DIVIDENDS DECLARED.

The board of directors of the Rubber Goods Manufacturing Company declared, on September 13, the fiftieth regular quarterly dividend of 1¾ per cent. on the preferred stock, and a dividend of 2 per cent. on the common stock, both payable September 19 to stockholders of record September 16, 1911.

The Firestone Tire and Rubber Company has placed its common stock on the same dividend basis as the preferred stock, both now paying at the rate of 7 per cent. per annum.

The Diamond Rubber Company has declared the regular quarterly dividend of 3½ per cent. on its stock, payable October 20. Books close October 14 and reopen on the 20th.

The Intercontinental Rubber Company paid a dividend of 1¾ per cent. on its preferred stock, September 30. It is expected that action on the common stock will be taken early this month.

The Canadian Consolidated Rubber Co. has declared a regular quarterly dividend of 1¾ per cent. on its preferred, and 1 per cent. on its common stock, both payable October 2, to stock holders of record on September 23.

RUBBER MEN IN THE MOTOR TRUCK CLUB.

The Motor Truck Club, established in November last, and which now has about 60 members, is actively engaged in protecting the interests of the motor truck industry. Its offices are at 8 West Sixty-second street, New York, the president being Mr. F. B. Porter, manager of the Chase Motor Truck Company, and the secretary, Mr. Charles E. Stone, of the United States Motor Company.

Its membership includes various prominent rubber tire manufacturing firms, among others: Diamond Rubber Company, B. F. Goodrich Company, Goodyear Tire & Rubber Company, United States Tire Company, Republic Rubber Company, Swinehart Tire & Rubber Company.

Through the combined efforts of the Motor Truck Club and the Automobile Club of America, motor trucks are now admitted to the piers of the domestic steam lines. They are, by latest accounts, still excluded from the piers of the foreign lines.

THE WESTINGHOUSE AIR BRAKE REPORT.

The financial report of the Westinghouse Air Brake Co., for the fiscal year ending July 31, 1911, has recently been made public. Its manufacturing profit on sales of brake apparatus, compressors, repair parts and draft gear, aggregating $8,036,193.44, as compared with $12,463,004.91 last year, together with a substantially increased income from investments, enabled the company to pay the dividends declared during the year under review, totaling 20 per cent., to charge off $161,667.12 on account of depression, development work and patents purchased, and to pass $123,133.81 to the credit of general profit and loss account.

While the manufacturing profit was materially smaller than last year, the president expresses the hope that in view of the depressed condition of the railway supply business during the large part of last year, the stockholders will find the results satisfactory. A dividend of 5 per cent. was received in August on the company's holdings in the Russian Brake Co., showing a revival of equipment business in Russia. The other foreign companies in which the Westinghouse company is interested have also done an improved business during the last year. The company declares a regular dividend of 2½ per cent., an extra dividend of 1½ per cent. and a special dividend of 1 per cent., all payable October 10, to stockholders of record, on September 23.

UNITED STATES RUBBER CO.'S ISSUES.

Transactions on the New York Stock Exchange for four weeks ending September 23:

Common Stock, $25,000,000.

[The treasury of a subsidiary company holds $1,334,000.]

Last Dividend, April 30, 1900—1%.

Week September 2	Sales 3,700 shares	High 37¾	Low 36⅜
Week September 9	Sales 2,100 shares	High 37	Low 36⅛
Week September 16	Sales 1,100 shares	High 37¼	Low 36½
Week September 23	Sales 8,600 shares	High 37¼	Low 31½

For the year—High, 47⅜, March 1; Low, 31½, September 23.
Last year—High, 52½; Low, 27.

First Preferred Stock, $39,824,400.

Last Dividend, July 31, 1911—2%.

Week September 2	Sales 400 shares	High 109¼	Low 108½
Week September 9	Sales 200 shares	High 109	Low 109
Week September 16	Sales 700 shares	High 109⅛	Low 107⅞
Week September 23	Sales 1,450 shares	High 108½	Low 104⅛

For the year—High, 115¼ July 7; Low, 104⅛, September 23.
Last year—High, 116½; Low, 99.

Second Preferred Stock, $9,965,000.

Last Dividend, July 31, 1911—1½%.

Week September 2	Sales .... shares	High ...	Low ...
Week September 9	Sales .... shares	High ...	Low ...
Week September 16	Sales .... shares	High ...	Low ...
Week September 23	Sales 500 shares	High 71	Low 67

For the year—High, 79, March 1; Low, 67, September 23.
Last year—High, 84; Low, 59½.

Six Per Cent. Trust Gold Bonds, $19,000,000.

Outstanding of the 1908 issue of $20,000,000.

Week September 2	Sales 12 bonds	High 104½	Low 104
Week September 9	Sales 41 bonds	High 104⅜	Low 104
Week September 16	Sales 33 bonds	High 104¼	Low 104
Week September 23	Sales 74 bonds	High 104⅛	Low 103½

For the year—High, 105, July 15; Low, 102¾, March 5.
Last year—High, 106; Low, 102¼.

PERSONAL MENTION.

The following anecdote alleged to have been told by Mr. E. C. Benedict, and the accompanying photograph—considerably retouched—are both taken from the "Cosmopolitan Magazine." Mr. Benedict was sympathizing with the owner of a motor boat who had lost a race through some sort of sharp practice. To show his friend that others had suffered misfortune, he told the following story of an old darky of his acquaintance who once lay seriously ill of fever:

This colored man was treated for a long time by one doctor, and then another doctor, for some reason, came and took the first one's place. The second physician made a thorough examination of the patient. At the end he said, "Did the other doctor take your temperature?"

"Ah dunno, sah," the patient answered. "Ah hain't missed nuthin' so fur but mah watch."

Mr. Alfred H. Schlesinger, superintendent of the American Hard Rubber Company's factory at College Point, Long Island, has been forced to retire on account of ill health. Mr. Schlesinger is the son of A. D. Schlesinger, who for many years was superintendent of the same company and one of the pioneers in the hard rubber business. The son made an enviable record as an exceedingly capable and intelligent, and up-to-date manager, and it is sincerely hoped that his enforced vacation will result in the complete upbuilding of his health.

Francis Lynde Stetson, general counsel for the United States Rubber Company, and a member of the board of directors, has been elected chairman of the section on Legal Education of the American Bar Association.

TRADE NEWS NOTES.

The Hartford Rubber Works Company (Hartford, Connecticut) is erecting a new storeroom on the west side of its present buildings.

The National India Rubber Company (Bristol, Rhode Island) recently made a shipment of two carloads of electric cable to the Baltimore and Ohio Railroad. The shipment consisted of 49 drums, and three of them weighed about five tons each, said to be the longest and largest pieces of insulated wire ever made.

The Summit Rubber Company (Barberton, Ohio) recently incorporated, is doubling its manufacturing capacity and very largely increasing its floor space.

W. S. Hathaway, supervisor of the United States Motor Car Company, with his son, G. L. Hathaway, and B. C. Stimson, of the company's Minneapolis branch, has recently made a journey of inspection to the rubber plantations at Port Limon, Costa Rica, with a view to acquiring some rubber growing property, for development in connection with the company's tire business.

The Consolidated Rubber Tire Company (New York) calls its automobile tires the "Kelly-Springfield." That is the name which it has been using for its carriage tire for the past 16 years.

The Electric Storage Battery Company (Philadelphia) has given out a contract for a new building to be 115 x 300 feet and six stories high, with a one-story extension 80 x 120 feet. This building will be constructed in accordance with the Brown patented system of reinforced concrete construction. The company will have very largely increased facilities in its new building.

The Goodyear Tire and Rubber Company (Akron) intends to place $15,000 insurance on the dirigible transatlantic balloon in which Mr. Vaniman expects soon to start from Atlantic City on a trip across the water.

Carload lots of asbestos have recently been shipped from the chrysotile mines at Lowell, Vermont, to Baltimore.

An electric show, which promises to be important and complete, will be given in Boston next fall, continuing from September 28 to October 26, 1912. It will be held in the Mechanics Building, where the floor space available for exhibitors amounts to 100,000 square feet. This electric show will be under the management of the Edison Electric Illuminating Company, of Boston, though it is not designed by the company to make any financial profits out of it. The intention is rather to give all the electrical manufacturers an opportunity to display their products and to show the world at large what has been achieved in this department. The management hopes to arrange with the New England railroads for excursion rates from every point in New England during the duration of the show.

The Kerite Insulated Wire and Cable Company has acquired the interests of the Watson Insulated Wire Company and has established a Western office in the People's Gas Building, Chicago. The manager of this office will be B. L. Winchell, Jr., formerly vice-president of the Watson company.

Work was resumed in all the departments of the National India Rubber Company (Bristol, Rhode Island) during the last week in August. One of the last to resume was the footwear department, which had been closed for over two months. Shutdowns in this factory, however, have been less frequent and much shorter in duration in the last few years than they were in years gone by, greatly to the satisfaction of the people in Bristol, who look upon the big National plant as their chief mainstay.

Work was resumed in the factory of the Beacon Falls Rubber Shoe Company (Beacon Falls, Connecticut) on September 5. During the previous weeks, while the factory was closed, a new heating apparatus was installed and sundry other repairs were made.

All the employés of the Apsley Rubber Company (Hudson, Massachusetts) went back to work on September 5 on full time, after the summer shutdown.

NEW INCORPORATIONS.

Endurance Tire and Rubber Company, September 12, 1911, under the laws of New York; authorized capital, $10,000. Incorporators: W. G. H. Randolph, No. 460 Riverside Drive; Edward W. Tabor, No. 134 West Eighty-fifth street, and James E. Bennet, No. 150 Nassau street—all of New York. Location of principal office, New York. To manufacture tires, rubber goods, etc.

Goblet-Dolan Manufacturing Company, September 9, 1911, under the laws of New Jersey; authorized capital, $60,000. Incorporators: George Staats, No. 252 Lorimer street, Brooklyn, New York; William Goblet, Rosebank, Staten Island, New York, and David J. Dolan, Elizabeth, New Jersey. To manufacture, purchase or otherwise acquire, deal in, sell, hire, lease, etc., machines and articles made wholly or in part of wood, metal, rubber, etc.

Higrade Auto Tire Sales Co., September 21, 1911, under the laws of New York. Authorized capital, $50,000. Incorporators: A. Forshay, No. 13 Park Place, New York; Helen Neubardt, No. 220 Roebling street, Brooklyn, New York, and Russell Goldman, No. 13 Park Place, New York. Location of principal office, Manhattan. To manufacture auto tires.

Household Rubber Company, August 3, 1911, under the laws of Ohio; authorized capital, $10,000. Incorporators: D. G. Armstrong, Harry Svensgaard and E. A. Armstrong. The company has been incorporated to deal at wholesale and retail in rubber goods, bicycles, motorcycles, etc. Location of principal office, Youngstown, Ohio.

International Tire and Tube Company, September 7, 1911, under the laws of New York; authorized capital, $3,000. Incorporators: Robert J. Dunlap, No. 119 Avenue D, Bayonne, New Jersey; Robert F. Randall and Theodore M. Crisp—both of No. 80 Broadway, New York. Location of principal office, New York. To manufacture tires, etc.

Interstate Tire Works, September 2, 1911, under the laws of New York; authorized capital $5,000. Incorporators: Edward D. Newman, No. 160 Broadway; Stanley Newman and Samuel C. Newman, both of No. 247 West One Hundred and Twenty-seventh street—all of New York. Location of principal office, New York. To manufacture tires and rubber goods.

Lindsay Bros. Company, August 30, 1911, under the laws of New York; authorized capital, $18,000. Incorporators: Edward A. Quiri, James and John Lindsay—all of Amsterdam, New York. To manufacture leather and rubber goods, shoes, rubbers, etc. Location of principal office, Schenectady, New York.

Metropolitan Rain Coat Company, September 14, 1911, under the laws of New York; authorized capital, $2,100. Incorporators: Wm. Miller, No. 138 Graham avenue; Alexander Samilow, No. 24 Belvidere W, and Solomon Teitelbaum, No. 929½ Lafayette avenue—all of Brooklyn, New York. Location of principal office, Brooklyn. To manufacture rubber clothing, etc.

Moju Rubber Plantations and Development Company, July 10, 1911, under the laws of West Virginia; authorized capital, $250,000. Incorporators: James H. Hoyt, Gustav von den Steinen and G. W. Cottrell—all of Cleveland, Ohio. The company has been incorporated to harvest rubber, cocoa, vanilla, timber, etc. Colgate Hoyt is president of the company and W. T. C. Carpenter is secretary.

O. & W. Company, August 30, 1911, under the laws of New York; authorized capital, $100,000. Incorporators: Max C. Overman, Edward Nelson, both of No. 250 West Fifty-fourth street, New York, and Douglas B. Wesson, Long Meadows, Massachusetts. To manufacture tires, rims, etc. Location of principal office, Manhattan.

The Rubber Waste Company, September 8, 1911, under the laws of New York; authorized capital, $2,000. Incorporators: Gabriel Muehlstein, Julius Muehlstein, both of No. 422 West One Hundred and Twenty-second street, New York, and Alfred Alexander, Rocky Beach. Location of principal office, New York.

Summit Rubber Company, August 11, 1911, under the laws of Ohio; authorized capital, $50,000. Incorporators: O. C. Dickerhorf, L. J. Johnson, Walter Seiberling and S. D. Brown. To manufacture rubber goods and products and dealing in same. Location of principal office, Barberton, Ohio.

E. A. Wick Rubber Company, August 12, 1911, under the laws of Ohio; authorized capital, $3,000. Incorporators: Elbridge Ayer Wick, Dudley R. Kennedy and Curtis A. Manchester. The company has been incorporated for the purpose of conducting a store or agency for the buying and selling and dealing in automobile tires and rubber goods and accessories of all kinds. Location of principal office, Youngstown, Ohio.

TRADE NEWS NOTES.

Parker L. Marean, formerly factory superintendent of the Beebe and Richards Rubber Co., North Brookfield, Massachusetts, becomes associated, on October 1, with the Boston Woven Hose and Rubber Co., of Boston, as assistant superintendent of their factory in Cambridge.

The Hope Rubber Co. [Providence, Rhode Island], has leased the premises at No. 241 Thames street, Newport, Rhode Island, for a branch store, to be opened early in October, where a complete line of all kinds of manufactured rubber goods, including automobile tires will be carried. This new Newport store will be in charge of P. W. Saunders, formerly president and manager of the Granite State Rubber Co., Manchester, New Hampshire.

The night shift at the Beacon Falls Rubber Shoe Co., factory, Beacon Falls, Connecticut, recently went out on a strike because their request for certain changes in working conditions was not complied with.

The Republic Rubber Co., Youngstown, Ohio, has established a branch store in San Francisco, at Golden Gate avenue and Hyde street. Other branches are to follow in Los Angeles, Portland and Seattle.

Mr. Charles C. Beebe has withdrawn as treasurer of the B. & R. (Beebe and Richards)Rubber Company, of North Brookfield, Massachusetts, to become manager of the H. H. Brown shoe factory. Mr. Thomas J. Richards, president of the B. & R. company, will have the sole management of the business, taking charge both of the sales and of the manufacturing departments.

A "special" sent to one of the metropolitan dailies states that $250,000 has been subscribed for a plant in western Texas for extracting from the Candelilla plant, a substance which, it is claimed, is a good substitute for gutta-percha. Inquiry of the United States Department of Agriculture, however, fails to verify this new industry.

The Howe-Baumann Balloon Co., with office and factory at 187-189 Murray street, Newark, New Jersey, has been formed by a combination of stockholders in the Howe Rubber Co., and the Baumann Rubber Co. Balloons will be one of the company's specialties, and Mr. Walter Leatherow, who has had many years' experience in this line, is in charge of this department, which is equipped with all the most improved machinery. The office management will be in charge of Mr. Tenney and Mr. Dodge, of the Howe Rubber Co., and Mr. Lautenbach, of the Baumann Rubber Co., will have the supervision of the selling department.

TRADE NEWS NOTES.

The Boston Woven Hose and Rubber Company (Boston, Massachusetts) paid its regular quarterly dividend of $2.50 per share on September 15.

The Diamond Rubber Company (Akron, Ohio) has been granted permits for two additional buildings, one large building 114 x 185 feet to be used as a calender room, and the other, a smaller structure, 40 x 180 feet two stories high, to be used for a mill room; both plants to be built of brick and steel.

The Cross & Brown Co. has been appointed agent for the United States Rubber Company building, which is being erected at the southeast corner of Broadway and Fifty-eighth street, New York.

Four new directors—John R. Morron, Charles A. Corliss, Joseph T. Talbert and I. V. McGlone were elected to the board of the Intercontinental Rubber Company on August 16.

The plant of The Derby Rubber Company (Derby, Connecticut) was closed down in August for extensive repairs and improvements. Eight new washers were installed, practically doubling the company's washing capacity, and new conveyors and elevators have also materially increased the capacity of the plant. The factory was reopened early in September with considerably enlarged facilities.

The Diamond Rubber Co. has recently erected a fine building in Houston Texas, especially adapted for the carrying of a large stock of all the rubber goods manufactured by them. The Houston store will have probably as large a stock of tires and mechanical rubber goods as is carried anywhere in the southwest.

George Westinghouse, who has an air-spring device to supplant rubber tires, is also reported to be negotiating for the purchase of a manufacturing site in New York State, when 6,000 men will be employed in manufacturing the new invention.

The Wilson-Goucher Company has opened an automobile tire salesroom in Washington, District of Columbia, at 1705 Fourteenth street. Diamond tires will form the chief stock in trade.

The B. & R. Rubber Company, North Brookfield, Massachusetts, are making notable additions to their plant. The mill room, for example, has been increased by nearly 4,000 square feet. The company are also adding a 500-h.p. engine, three 150-h.p. boilers, several mixing mills and refiners, 15 hydraulic presses for the manufacture of rubber mats, matting and general molded goods. They are also adding two large tubing machines, 10 jar ring cutting lathes and several vulcanizers.

The National Rubber Company, Bristol, R. I., is particularly busy in its insulated cable and druggists' sundries departments. In the latter department, the work is carried on throughout the whole 24 hours.

The report was recently bruited around Wall Street that the Intercontinental Rubber Company was suffering from an overproduction of Guayule rubber. At the company's office, however, this was denied. It was further said that the employees of the company, who had recently been out on a strike, had returned to work and that the mills are being operated at their full capacity.

It is estimated that 90 per cent. of the world's supply of asbestos is taken from the Sherbrooke district, Ontario.

The American Asphalt and Rubber Company, which recently secured a contract for paving certain streets in Grand Rapids, Michigan, has been obliged to suspend work, because of an injunction obtained against them by Warren Brothers, on the ground of infringement.

The United States Tire Company has recently opened branches in Portland, Seattle, Fresno, Los Angeles, Denver and Salt Lake City.

Thomas Taylor & Son, of Hudson, Massachusetts, manufacturers of elastic webbing, expect to build an addition to their factory, 18 x 45 feet, and 4 stories high.

PERSONAL MENTION.

Henry Hornblower, of Hornblower & Weeks, of Boston, a director in the Converse Rubber Shoe Co., was elected, on September 25, to the office of president of the Boston Stock Exchange.

A. Staines Manders, who has been the organization manager

A. STAINES MANDERS.

of the successful international rubber exhibitions that have been held in London, is now in New York with a view to ascertaining the feasibility of holding a rubber exhibition in this country.

B. G. Work, president of the B. F. Goodrich Co., Akron, Ohio, sailed for Europe September 28.

Jose Simao Da Costa, of the Alves Braga Rubber Estates and Trading Co., Pará, recently arrived in New York.

JOSE SIMAO DA COSTA.

Luke S. Stowe, treasurer of the Easthampton Rubber Thread Company (Easthampton, Massachusetts), is a very strong candidate for the republican nomination for the state senate from his district. Mr. Stowe was president of the Easthampton Rubber Thread Company for 10 years, from 1897 to 1907, and has been a director of that company since 1891.

Review of the Crude Rubber Market.

ACTIVITY of demand and the reduced supplies available on account of the strikes, tended to harden London prices during the last days of August, while the fluctuations in the first week of September caused a slight reaction from $1.16 on August 29 to $1.13 on September 9. From that point an improvement set in until the equivalent of $1.20 was reached on September 16. From this point there had been up to September 26 a falling off to the equivalent of $1.15; a slightly lower figure having meanwhile been reached.

The confidence expressed in some quarters as to the prospective course of the London market, has been due in great measure to the anticipation of renewed buying on account of manufacturers' stocks being low, their purchasing operations having of late been on a limited scale.

At the London plantation rubber auctions of September 5 and 7, there was good competition, but prices of better grades, in harmony with the movement of the market, showed a decline of 2 to 4 cents on the rates of the previous sale of August 24.

While the New York market has been quiet, it has been noted with relative satisfaction that the falling off recorded, barely represents one-third of the average upward improvement recorded since June last.

During the closing week of August, a large business in rubber was transacted in the Hamburg market, on the basis of existing quotations. The principal demand was for Pará descriptions, which to some extent fell off in the succeeding weeks. Special interest was manifested in fine Congo descriptions, and the best medium red grades. About the middle of the month a more active tone again prevailed.

In Antwerp, business has been on a relatively limited scale, on the basis of price established by the August sales. Futures slightly fell off and then improved, but subsequently became quieter.

According to the statistics for August, the stock of rubber in Antwerp was at the end of that month 522 tons, as compared with 537 tons a year previously. Sales in August had been 339 tons, against 407 tons in the corresponding month last year.

New York Quotations.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and August 31—the current date.

Para.	Oct. 1, '10.	Sept. 1, '11.	Sept. 29, '11.
Islands, fine, new	155@156	108@109	107@108
Islands, fine, old	none here	110@111	109@110
Upriver, fine, new	165@166	117@118	113@114
Upriver, fine, old	169@170	119@120	115@116
Islands, coarse, new	90@ 91	62@ 63	61@ 62
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	122@123	97@ 98	96@ 97
Upriver, coarse, old	none here	98@ 99	none here
Cametá	90@ 91	67@ 68	66@ 67
Caucho (Peruvian) ball	119@120	96@ 97	98@ 99
Caucho (Peruvian) sheet	none here	none here	none here
Plantation Para.			
Fine smoked sheet	159@160	138@139	135@136
Fine pale crepe	145@146	136@137	133@134
Fine sheets and biscuits	142@143	130@131	128@129
Centrals.			
Esmeralda, sausage	103@104	86@ 87	87@ 88
Guayaquil, strip	none here	none here	none here
Nicaragua, scrap	100@101	84@ 85	86@ 87
Panama	none here	none here	none here
Mexican, scrap	100@101	83@ 84	86@ 87
Mexican, slab	66@ 67	none here	none here
Mangabeira, sheet	80@ 81	none here	none here
Guayule	74@ 75	45@ 46	46@...
Balata, sheet	...@...	84@ 85	83@ 84
Balata, block	...@...	63@ 64	58@ 59
African.			
Lopori, ball, prime	130@131	110@112	111@112
Lopori, strip, prime	125@126	none here	none here
Aruwimi	122@123	102@104	101@102
Upper Congo, ball, red	120@121	110@112	110@111
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality	145@146	92@ 93	95@ 96
Massai, red	165@166	93@ 94	96@ 97
Soudan Niggers	115@116	none here	none here
Cameroon, ball	73@ 74	70@ 71	70@ 71
Benguela	98@ 99	none here	70@...
Madagascar, pinky	none here	83@ 84	85@ 86
Accra flake	none here	30@ 31	27@ 28
East Indian.			
Assam	none here	84@ 85	none here
Pontianak	5½@5¾	6⅛@6¼	6@...
Borneo	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	4$900	Upriver, fine	5$300
Islands, coarse	2$400	Upriver, coarse	4$000
Exchange	16 9/32d.		

Latest Manáos advices:

Upriver, fine	5$900	Exchange	16 9/32d.
Upriver, coarse	4$000		

New York Prices for August (New Rubber.)

	1911.	1910.	1909.
Upriver, fine	$1.09@1.17	$1.87@2.20	$1.79@1.95
Upriver, coarse	.95@ .99	1.40@1.48	1.10@1.20
Islands, fine	1.02@1.09	1.78@2.10	1.65@1.84
Islands, coarse	.61@ .63	.94@ .98	.62@ .75
Caméta	.66@ .68	.96@1.10	.80@ .92

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "As reported a month ago, the demand for commercial paper is still decreasing (not increasing as erroneously printed in the September number), and rates are ruling at 5@5¼ per cent. for the best rubber names, and 5½@6 per cent. for those not so well known."

African Rubbers.

New York Stocks (in Tons).

August 1, 1910	250	March 1, 1911	111
September 1	300	April 1	98
October 1	375	May 1	98
November 1	100	June 1	90
December 1	140	July 1	90
January 1, 1911	115	August 1	90
February 1	115	September 1	112

Rubber Scrap Prices.

Late New York Quotations.—prices paid by consumers for carload lots, per pound—are practically unchanged:

	September 1.	October 1.
Old rubber boots and shoes—domestic	9 @ 9⅛	9⅛@ 9¼
Old rubber boots and shoes—foreign	9 @ 9⅛	9 @ 9⅛
Pneumatic bicycle tires	4½@ 4¾	4½@ 4¾
Automobile tires	8⅜@ 8½	8½@ 8⅝
Solid rubber wagon and carriage tires	9¼@ 9¼	9¼@ 9¼
White trimmed rubber	11 @11½	11 @11½
Heavy black rubber	4¾@ 5	4¾@ 5
Air brake hose	4½@ 4¾	4½@ 4¾
Garden hose	1¾@ 1⅞	1¼@ 1⅜
Fire and large hose	2⅜@ 2⅝	2 @ 2¼
Matting	⅞@ 1	⅞@ 1

Statistics of Para Rubber (Excluding Caucho).

	New York. Fine and Medium.	Coarse.	Total 1911.	Total 1910.	Total 1909.
Stocks, July 31.....*tons*	314	71 =	385	209	230
Arrivals, August.....	800	446 =	1,246	702	500
Aggregating	1,114	517 =	1,631	911	730
Deliveries, August.....	815	446 =	1,261	740	574
Stocks, August 31.....	299	71 =	370	171	156

	Para.			England.		
	1911.	1910.	1909.	1911.	1910.	1909.
Stocks, July 31.....*tons*	3,450	485	550	1,400	1,140	245
Arrivals, August	1,295	1,460	1,610	465	348	510
Aggregating	4,745	1,945	2,160	1,865	1,488	755
Deliveries, August	1,735	1,360	1,250	555	213	460
Stocks, August 31....	3,010	585	910	1,310	1,275	295

	1911.	1910.	1909.
World's visible supply, August 31.....*tons*	5,281	2,473	1,981
Pará receipts July 1 to August 31.....	2,445	2,960	2,700
Pará receipts of caucho, same dates.....	710	1,210	580
Afloat from Pará to United States, August 31	231	229	none
Afloat from Pará to Europe, August 31....	360	215	620

Rubber Stocks at Para.

During the month of August a further reduction took place in the stock of rubber at Pará; the movement since the beginning of the year having been as follows:

1911.	Tons.	1911.	Tons.
January 31.....	2,085	May 31.....	5,350
February 28.....	3,787	June 30.....	4,545
March 31.....	4,214	July 31.....	3,884
April 30.....	5,104	August 31.....	3,450

A further diminution of stock was expected, until receipts increase later in the year.

Plantation Rubber from the Far East.

Exports of Ceylon Grown Rubber.

[From January 1 to August 28, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....*pounds*	816,083	1,666,659
To United States.....	718,808	1,161,260
To Belgium	26,425	320,072
To Japan	.....	33,985
To Australia	1,099	24,374
To Germany	10,206	17,418
To Canada	1,911	12,067
To Italy	841	3,597
To Holland	.....	1,203
To Austria	.....	255
To France	.....	117
To India	.....	85
Total	1,575,373	3,241,097

[Same period 1909—727,990 pounds; same 1908—447,485.]

Total Exports From Malaya.

(From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.)

From—	1909.	1910.	1911.
Singapore (to July 30)....*pounds*	1,474,849	1,737,117	3,148,720
Penang (to July 24).....	1,470,960	1,096,074	2,471,744
Port Swettenham (to July 7)....	.....	4,069,587	5,994,795
Total	2,945,809	6,902,778	11,615,259

The Rubber Season of 1910-11.

The world's production of rubber for the season 1910-11, as reported in Hecht's statistics, amounted to 79,305 tons, against 76,553 tons for the corresponding period of 1909-10. Consumption seems to have fallen off to some extent; the reduction being from 76,026 tons to 74,082 tons. Stocks at the end of June, 1911 were 12,563 tons, against 6,998 a year earlier.

Arrivals in Europe increased from 44,336 to 45,085 tons, while those in America receded from 33,051 to 30,618 tons.

Deliveries rose in Europe from 42,527 tons to 43,692 tons, while they fell in America from 33,499 tons to 30,390 tons. Hence in America there were reduced receipts of 2,433 tons, against reduced deliveries of 3,109 tons.

Fine Pará quotations are recorded as follows:

End of July, 1910, $2.10 to $2.45.

End of January, 1911, $1.02 to $1.40.

End of June, 1911, $0.94 to $1.08.

Amsterdam.

F. Joosten reports [September 16]:

Our market continued firm with good demand, especially good for fine Rambongs, of which several lots changed hands.

The next sale will take place on September 29, and contains about 36,900 kilos in all, of which there will be about 21,440 kilos Rambongs, 12,150 kilos *Hevea*, 1,320 kilos *Castilloa*, 1,450 kilos Madagascar, and 500 kilos sundries, further 13,900 kilos Sambas and 1,200 kilos paste.

About 6,000 kilos gutta-percha from the government plantations "Tjipetir" per steamer *Rembrandt* will soon be warehoused and will be offered for sale by private treaty.

Liverpool.

William Wright & Co. report [September 1]:

Fine Pará.—The market has been firm, but on the whole, quiet, owing to sellers adopting a cautious policy for future delivery. Prices advanced to 4*s.* 11½*d.* [$1.21] for hard fine, but have since reacted to 4*s.* 9*d.* [$1.16]; the undertone is firm, and with small receipts we do not anticipate violent fluctuations. The American market is firm, with a fair demand at our parity; shipments from here to New York are larger than last month. Closing value: Hard fine, 4*s.* 9*d.* [$1.16]; soft, 4*s.* 6½*d.* [$1.10]. Receipts are smaller than corresponding month of last year, being 1,500 tons, including 300 tons caucho, against 1,420 tons last month and 1,870 tons last year, bringing the crop up to date to 3,010 tons, against 4,200 tons last season. Deliveries are 1,284 tons, against 1,116 tons last month, and 499 tons last year, totalling 2,400 tons, against 2,043 tons last season.

Para.

R. O. Ahlers & Co. report [September 4]:

These last few days a firmer tendency has manifested itself owing to freer buying on the part of importers to the United States.

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

September 5.—By the steamer *Justin*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	78,100	19,600	33,700	1,300	=132,700
A. T. Morse & Co.....	28,400	5,800	32,700	.....	= 66,900
New York Commercial Co..	10,700	2,500	25,900	10,600	= 49,700
De Lagottelerie & Co.....	20,300	5,000	16,500	.....	= 41,800
Hagemeyer & Brunn.....	12,500	700	1,300	.....	= 14,500
General Rubber Co.....	.....	.....	4,500	.....	= 4,500
Total	150,000	33,600	114,600	11,900	=310,100

September 19.—By the steamer *Minas Geraes*, from Pará:

Poel & Arnold.....	13,000	9,800	65,000	.....	= 87,800
De Lagottelerie & Co.....	11,400	1,800	10,600	.....	= 23,800
New York Commercial Co..	.....	.....	21,800	.....	= 21,800
A. T. Morse & Co.....	11,000	700	3,300	.....	= 15,000
Total	35,400	12,300	100,700	.....	=148,400

September 20.—By the steamer *Polycarp*, from Manáos and Pará:

Poel & Arnold.....	520,000	115,800	174,400	1,500	=811,700
New York Commercial Co..	185,500	47,300	81,100	11,100	=324,900
A. T. Morse & Co.....	140,200	14,100	50,200	42,800	=247,300
Hagemeyer & Brunn.....	26,300	1,100	13,200	.....	= 40,600
Henderson & Korn.....	8,600	1,100	5,900	.....	= 15,600
De Lagottellerio & Co.....	8,900	1,400	2,000	.....	=12,300
General Rubber Co.....	.....	.....	6,600	.....	= 6,600
Total	889,500	180,800	333,300	55,400	=1,459,000

September 25.—By the steamer *Goyaz*, from Pará:

Poel & Arnold.....	38,200	2,900	92,400	.....	=133,500
New York Commercial Co..	7,100	1,100	21,800	13,900	= 43,900
Henderson & Korn.....	8,900	.....	10,500	.....	= 19,400
Total	54,200	4,000	124,700	13,900	=196,800

PARA RUBBER VIA EUROPE.

POUNDS.

AUGUST 28.—By the *Kaiserin Auguste Victoria*=Hamburg:
Wallace L. Gough Co. (Fine)..... 4,500

AUGUST 28.—By the *Navarre*=Bolivar:
General Exp. Comm. Co. (Fine) 5,500
General Exp. Comm. Co. Coarse) 2,200 7,700

AUGUST 30.—By the *Oruba*=Mollendo:
A. T. Morse & Co. (Fine)..... 11,500
A. T. Morse & Co. (Caucho).. 18,000 29,500

SEPTEMBER 5.—By the *Cleveland*=Hamburg:
Wallace L. Gough Co. (Fine)..... 7,000

SEPTEMBER 7.—By the *Saramaca*=Bolivar:
General Exp. Comm. Co. (Fine) 6,500
General Exp. Comm. Co. (Coarse) 10,000 16,500

SEPTEMBER 7.—By the *Zacapa*=Mollendo:
N. Y. Commercial Co. (Fine)..... 5,000

SEPTEMBER 7.—By the *Amerika*=Hamburg:
Poel & Arnold (Fine)..... 4,500
Raw Products Co. (Coarse).... 1,500 6,000

SEPTEMBER 8.—By the *Mauretania*=Liverpool:
Raw Products Co. (Coarse).... 13,500
Ed. Maurer (Coarse)..... 4,500 18,000

SEPTEMBER 11.—By the *New York*=London:
Poel & Arnold (Coarse)..... 15,500

SEPTEMBER 12.—By the *Bluecher*=Hamburg:
Poel & Arnold (Coarse)..... 11,500

SEPTEMBER 13.—By the *Magdalena*=Mollendo:
General Rubber Co. (Caucho).. 22,500
L. Johnson & Co. (Caucho).. 4,000
F. Rosenstern & Co. (Fine).... 3,000 29,500

SEPTEMBER 15.—By the *Baltic*=Liverpool:
General Rubber Co. (Fine).... 11,000
Muller, Schall Co. (Fine)..... 7,000
Wallace L. Gough Co. (Fine).. 2,500
General Rubber Co. (Coarse).. 11,500 32,000

SEPTEMBER 20.—By the *President Lincoln*=Hamburg:
N. Y. Commercial Co. (Fine).. 4,500
N. Y. Commercial Co. (Coarse) 4,500
Wallace L. Gough Co. (Fine).. 4,500 13,500

SEPTEMBER 20.—By the *Caronia*=Liverpool:
Poel & Arnold (Fine)..... 115,000
Poel & Arnold (Coarse)..... 11,500
Poel & Arnold (Caucho)..... 45,000
N. Y. Commercial Co. (Fine).. 3,000
Raw Products Co. (Coarse).... 5,000 179,500

SEPTEMBER 22.—By the *Celtic*=Liverpool:
N. Y. Commercial Co. (Fine).. 60,000
C. P. Santos (Fine)..... 11,000
Henderson & Korn (Coarse)... 5,500 76,500

SEPTEMBER 23.—By the *Campania*=Liverpool:
Poel & Arnold (Fine)..... 90,000

SEPTEMBER 23.—By the *Philadelphia*=London:
Poel & Arnold (Coarse)..... 50,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

POUNDS.

AUGUST 26.—By *El Occidente*=Galveston:
Continental-Mexican Rubber Co.*115,000
Charles T. Wilson & Co..... *11,000 *126,000

AUGUST 28.—By the *Philadelphia*=London:
Poel & Arnold..... 5,500

AUGUST 28.—By the *Bayamo*=Tampico:
Ed. Maurer *22,500
Poel & Arnold *27,000
For Europe *150,000 *199,500

AUGUST 28.—By the *Prinz Sigismund*=Colombia:
A. Angela & Co..... 9,000
G. Amsinck & Co..... 7,000
Scholz & Marturet..... 2,500
J. H. Rossbach & Bros..... 2,000
Roldan & Van Sickle..... 1,000 21,500

AUGUST 29, By the *Terence*=Bahia:
J. H. Rossbach & Bros..... 47,000

AUGUST 29.—By *El Alba*=Galveston:
Continental-Mexican Rubber Co..... *85,000

AUGUST 30.—By the *Panama*=Colon:
G. Amsinck & Co..... 3,500
Piza, Nephews & Co..... 3,000
A. T. Morse & Co..... 3,000
Wessels, Kulenkampff & Co.... 2,000
Gillespie Bros. & Co..... 1,000 12,500

AUGUST 31.—By *El Mundo*=Galveston:
Continental-Mexican Rubber Co. *38,000
Ed. Maurer *11,000 *49,000

SEPTEMBER 1.—By the *Ancon*=Colon:
Isaac Brandon & Bros..... 14,000
G. Amsinck & Co..... 3,000
N. Y. Commercial Co..... 3,000
Pablo, Calvert & Co..... 2,500
J. Sambrada & Co..... 1,500
Dumarest Bros. & Co..... 1,000
Lanman & Kemp 1,000 26,000

SEPTEMBER 1.—By *El Oriente*=Galveston:
Continental-Mexican Rubber Co..... *37,000

SEPTEMBER 1.—By the *Morro Castle*=Frontera:
Harburger & Stack..... 5,000
A. T. Morse & Co..... 2,500
L. Thompson & Co..... 2,000
G. Amsinck & Co..... 2,500
E. Steiger & Co..... 1,500
Lawrence Import Co..... 1,000 14,500

SEPTEMBER 5.—By the *Seguranca*=Tampico:
Ed. Maurer *45,000
For Europe *33,000 *79,000

SEPTEMBER 6.—By the *Voltaire*=Bahia:
A. Hirsch & Co..... 65,000

SEPTEMBER 6.—By the *Prinze Joachim*=Colon:
G. Amsinck & Co..... 3,500
Mecke & Co..... 2,000
J. Sambrada & Co..... 1,500
Andean Trading Co..... 1,500
Jose Julia & Co..... 1,500
Isaac Brandon & Bros..... 1,000 11,000

SEPTEMBER 7.—By *El Norte*=Galveston:
Continental-Mexican Rubber Co..... *38,000

SEPTEMBER 8.—By the *Monterey*=Vera Cruz:
J. W. Wilson & Co..... 4,500
E. Nelson Tibbals & Co..... 3,500
H. Stolpner 1,500
H. Marquardt & Co..... 1,000
Harburger & Stack..... 1,000 11,500

SEPTEMBER 8.—By *El Rio*=Galveston:
Continental-Mexican Rubber Co. *40,000
Charles T. Wilson..... *11,500 *51,500

SEPTEMBER 9.—By the *Comus*=New Orleans:
Manhattan Rubber Mfg. Co.... 3,000
A. T. Morse & Co..... 2,500 5,500

SEPTEMBER 9.—By the *Matanzas*=Tampico:
Ed. Maurer *67,000
For Europe *90,000 *157,000

SEPTEMBER 11.—By *El Sol*=Galveston:
Continental-Mexican Rubber Co. *50,000
Charles T. Wilson..... *8,000 *58,000

SEPTEMBER 11.—By the *Colon*=Colon:
G. Amsinck & Co..... 25,000
Isaac Brandon & Bros..... 5,500
New York Commercial Co.... 5,000
Hirzel, Feltman & Co..... 5,000
American Trading Co..... 4,500
Otto Gerdan 4,500
Caballero & Blanco..... 3,500
Jose Julia & Co..... 2,000
Roldau & Van Sickle..... 1,500
United Export Co..... 1,000
Pablo Calvet Co..... 1,000
Dumarest Bros. & Co..... 1,000
Gillespie Bros. & Co..... 1,000 60,500

SEPTEMBER 11.—By the *Creole*=New Orleans:
A. Rosenthal & Sons..... 4,500
A. T. Morse & Co..... 2,000
W. L. Wadleigh..... 2,500
Robinson & Co..... 2,000
Eggers & Heinlein..... 1,500 12,500

SEPTEMBER 12.—By the *Bluecher*=Hamburg:
Poel & Arnold..... 33,000
A. T. Morse & Co..... *7,000 40,000

SEPTEMBER 13.—By the *Magdalena*=Colombia:
A. M. Capen's Sons..... 9,000
G. Amsinck & Co..... 7,000
Maitland Coppell & Co..... 3,500
R. Castillo & Co..... 2,500
J. Sambrada & Co..... 2,500
Mecke & Co..... 2,000
Kunhardt & Co..... 1,500
Brandon & Bros..... 1,500
Delima Cortissox & Co..... 1,000
Meyer Hecht 1,000
Suzarte & Whitney..... 1,000 32,500

SEPTEMBER 13.—By the *Asiatic*=Bahia:
J. H. Rossbach & Bros..... 30,000
A. D. Hitch & Co..... 2,000 32,000

SEPTEMBER 14.—By the *Majestic*=London:
Poel & Arnold..... 33,500

SEPTEMBER 15.—By the *Mexico*=Frontera:
Harburger & Stack..... 6,500
H. Marquardt & Co..... 5,500
E. Steiger & Co..... 2,500
Willard Hawes & Co..... 1,500
Herman Klugge 1,000 17,000

SEPTEMBER 18.—By the *Lusitania*=Liverpool:
George A. Alden & Co..... 15,500

SEPTEMBER 18.—By the *Vigilancia*=Tampico:
Ed. Maurer *95,000
For Europe *9,000 *104,000

SEPTEMBER 18.—By the *Albingia*=Colombia:
A. Angelo & Co..... 4,500
Heilbron Wolff & Co..... 2,000
G. Amsinck & Co..... 2,000
Iglesias Lobo & Co..... 2,000
A. Helde 1,500
Caballero & Blanco..... 1,000 13,000

SEPTEMBER 19.—By *El Alba*=Galveston:
Continental-Mexican Rubber Co..*210,000
Charles T. Wilson..... *15,000 *225,000

SEPTEMBER 21.—By the *Prinz August Wilhelm*=Colombia:
G. Amsinck & Co..... 7,500
Graham Hinkley & Co..... 2,000
Suzarte & Whitney..... 1,000
Isaac Brandon & Bros..... 2,000 12,500

SEPTEMBER 23.—By the *Panama*=Colon:
G. Amsinck & Co..... 11,500
Isaac Brandon & Bros..... 9,000
New York Commercial Co..... 5,000
Geo. A. Alden & Co..... 3,500
Piza, Nephews & Co..... 2,500
L. Johnson & Co..... 2,000
Dumarest Bros. 1,500
Pablo Calvet Co..... 1,000 36,500

SEPTEMBER 25.—By the *Antilles*=Tampico:
Ed. Maurer *125,000
New York Commercial Co.....*130,000
J. W. Wilson Co..... *5,000 *260,000

SEPTEMBER 25.—By the *Tennyson*=Bahia:
J. H. Rossbach & Bros..... 33,000

AFRICAN.

POUNDS.

AUGUST 28.—By the *Kaiserin Auguste Victoria*=Hamburg:
A. T. Morse & Co..... 33,500
Rubber Trading Co..... 5,500
Wallace L. Gough Co..... 3,500 42,500

AUGUST 28.—by the *Espague*=Havre:
Muller, Schall & Co..... 11,500

AUGUST 28.—By the *Philadelphia*=London:
A. T. Morse & Co..... 18,000
Poel & Arnold..... 5,500
Rubber Trading Co..... 3,500 27,000

AUGUST 29.—By the *Vaderland*=Antwerp:
Poel & Arnold..... 30,000
Muller, Schall & Co..... 2,000 32,000

AUGUST, 29.—By the *Chicago*=Havre:
General Rubber Co..... 11,000

SEPTEMBER 5.—By the *Lapland*=Antwerp:
Poel & Arnold..... 15,500
Rubber Trading Co..... 5,500 21,000

SEPTEMBER 5.—By the *Cleveland*=Hamburg:
George A. Alden & Co..... 11,500
Poel & Arnold..... 9,000
Rubber Trading Co..... 15,000
Wallace L. Gough Co..... 5,500
F. Rosenstein & Co..... 6,500
Raw Products Co..... 2,000 49,500

SEPTEMBER 6.—By the *Olympic*=London:
George A. Alden & Co..... 11,500
Raw Products Co..... 2,500 14,000

SEPTEMBER 7.—By the *Amerika*=Hamburg:
Wallace L. Gough Co..... 15,000
A. T. Morse & Co..... 11,000
George A. Alden & Co..... 11,500
General Rubber Co..... 6,500
Raw Products Co..... 5,500
Rubber Trading Co..... 4,500
Robert Badenhop 2,300 56,300

SEPTEMBER 9.—By the *Carmania*=Liverpool:
General Rubber Co..... 13,500

SEPTEMBER 12.—By the *Kroonland*=Antwerp:
George A. Alden & Co..... 177,000
A. T. Morse & Co..... 26,000
Muller, Schall & Co..... 22,500
Poel & Arnold..... 13,500
Rubber Trading Co..... 2,500
In Transit 33,500 275,000

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

WRITE FOR PRICES.

Massachusetts Chemical Co., Walpole, Mass.

Sole Factories—
WALPOLE RUBBER WORKS,
WALPOLE VARNISH WORKS,
ELECTRIC INSULATION LABORATORY

THEODORE HOFELLER & CO.

LARGEST DEALERS IN OLD RUBBER IN THE WORLD.

Old Rubber

LARGEST DEALERS IN OLD RUBBER IN THE WORLD.

206-226 SCOTT ST. BUFFALO, N. Y.

MINERAL **AMAX** RUBBER

Boston New York

BOSTON YARN CO.

86 Worth Street, New York

MOTOR TIRE FABRICS

"Lowell Weaving Co." "Passaic Cotton Mills"

Yarns for every purpose
Sheetings

Mechanical Ducks
Osnaburgs

Auto Top Ducks
Specialties in Weaving

ED. MAURER

Representing the Madero Interests of Mexico for

Guayule Rubber

PARRA ***DURANGO***

MADERO ***LEON***

BRANDS

BORNEOS

Sole agent for U. S. and Canada of the well known brands

FFF, FF, GS and SM.

Headquarters for

Surinam and Demerara Sheet Balata
Venezuelan Block Balata

Ceylon Plantation Rubber

---

97 WATER STREET . NEW YORK

September 12.—By the *Bluecher*=Hamburg:

George A. Alden & Co.	150,000	
Poel & Arnold	135,000	
A. T. Morse & Co.	13,500	
Wallace L. Gough Co.	4,500	
Raw Products Co.	5,500	
Robert Badenhop	1,900	310,400

September 13.—By the *Bretagne*=Havre:

Poel & Arnold		135,000

September 14.—By the *Majestic*=London:

A. T. Morse & Co.	33,500	
Rubber Trading Co.	5,500	
General Rubber Co.	3,500	42,500

September 15.—By the *Baltic*=Liverpool:

Poel & Arnold	67,000	
A. T. Morse & Co.	22,500	
George A. Alden & Co.	22,500	
James T. Johnstone	22,500	
Robinson & Co.	11,000	
Ed. Maurer	15,000	
William H. Stiles	9,000	
Raw Products Co.	4,500	174,000

September 18.—By the *Cincinnati*=Hamburg:

A. T. Morse & Co.	9,000	
Rubber Trading Co.	4,500	
Robert Badenhop	7,000	
General Rubber Co.	2,500	23,000

September 20.—By the *Caronia*=Liverpool:

Poel & Arnold	55,000	
A. T. Morse & Co.	15,500	
Henderson & Korn	13,500	
William H. Stiles & Co.	9,000	
Raw Products Co.	4,500	
George A. Alden & Co.	4,500	
Robert Badenhop	2,050	104,050

September 20.—By the *President Lincoln*=Hamburg:

George A. Alden & Co.	100,000	
Poel & Arnold	15,000	
A. T. Morse & Co.	4,500	
Rubber Trading Co.	5,000	
Robert Badenhop	4,500	129,000

September 22.—By the *Celtic*=Liverpool:

James T. Johnstone		7,000

September 22.—By the *Kaiserin-Auguste Victoria*=Hamburg:

George A. Alden & Co.	25,000	
A. T. Morse & Co.	40,000	
Poel & Arnold	11,500	76,500

September 23.—By the *Campania*=Liverpool:

Wallace L. Gough Co.	25,000	
Poel & Arnold	13,500	
George A. Alden & Co.	7,000	
General Rubber Co.	7,000	
Robert Badenhop	11,300	63,800

[*Denotes plantation rubber.]

Pounds.

EAST INDIAN.

August 28.—By the *Philadelphia*=London:

New York Commercial Co.	*15,000	
In transit	*22,500	*37,500

August 30.—By the *Oceanic*=London:

Poel & Arnold	*56,000	
Ed. Maurer	*47,000	
A. T. Morse & Co.	*9,000	
William H. Stiles	*20,000	
James T. Johnston	*4,500	
Muller, Schall & Co.	*4,500	
In transit	*65,000	*206,000

September 5.—By the *St. Louis*=London:

New York Commercial Co.	*15,000	
Poel & Arnold	*79,000	
Manhattan Rubber Mfg. Co.	*5,500	*99,500

September 5.—By the *Lapland*=Antwerp:

A. T. Morse & Co.	*24,000	

September 5.—By the *Kansas*=Colombo:

A. T. Morse & Co.	*46,000	
Thomsen & Co.	*3,000	*49,000

September 6.—By the *Olympic*=London:

Poel & Arnold	*33,500	
A. T. Morse & Co.	*25,000	
New York Commercial Co.	*50,000	
Ed. Maurer	*7,500	
Robinson & Co.	10,000	126,000

September 8.—By the *Mesba*=London:

A. T. Morse & Co.	*34,000	
Ed. Maurer	*11,500	
Charles T. Wilson	*3,000	
C. P. dos Santos	22,500	
Robinson & Co.	9,000	80,000

September 11.—By the *Minnehaha*=London:

General Rubber Co.	*55,000	
Poel & Arnold	*30,000	
A. T. Morse & Co.	*22,500	
Ed. Maurer	*20,000	
James T. Johnstone	43,500	
Charles T. Wilson	*2,500	
Wallace L. Gough Co.	7,000	140,500

September 11.—By the *Pathan*=Singapore:

Ed. Maurer	20,000	
Otto Isenstein & Co.	4,500	
L. Littlejohn & Co.	4,500	29,000

September 11.—By the *New York*=London:

Poel & Arnold	*45,000	
New York Commercial Co.	*13,500	
Ed. Maurer	*3,500	
Poel & Arnold	55,000	117,000

September 12.—By the *Kroonland*=Antwerp:

New York Commercial Co.	*65,000	

September 14.—By the *Majestic*=London:

Poel & Arnold	*34,000	
Poel & Arnold	22,500	56,500

September 15.—By the *Lovate*=Singapore:

Ed. Maurer	*20,000	
A. W. Brunn	*15,000	
Otto Isenstein & Co.	20,000	
Heabler & Co.	22,500	
Poel & Arnold	11,500	
Manhattan Rubber Mfg. Co.	13,500	
L. Littlejohn & Co.	11,500	113,000

September 16.—By the *Uhenfels*=Colombo:

A. T. Morse & Co.	*70,000	
Poel & Arnold	*10,000	
New York Commercial Co.	*7,000	
Ed. Maurer	*5,000	
Muller, Schall & Co.	*3,500	
Thomsen & Co.	*2,500	
George A. Alden & Co.	4,500	102,500

September 18.—By the *Minnewaska*=London:

Poel & Arnold	*55,000	
A. T. Morse & Co.	*13,500	
Charles T. Wilson	*11,000	
James T. Johnstone	*5,500	
Ed. Maurer	*4,500	
Wallace L. Gough Co.	9,000	98,500

September 19.—By the *Finland*=Antwerp:

A. T. Morse & Co.	*3,500	
Robert Badenhop	*3,500	*7,000

September 19.—by the *Niagara*=Havre:

Poel & Arnold		*6,500

September 20.—By the *Oceanic*=London:

Poel & Arnold	*25,000	
In transit	*22,500	*47,500

September 20.—By the *Caronia*=Liverpool:

William H. Stiles		*11,500

September 23.—By the *Philadelphia*=London:

Poel & Arnold	*22,500	
New York Commercial Co.	*22,500	
Rubber Trading Co.	*7,000	
Poel & Arnold	15,000	67,000

September 25.—By the *Cloemfontein*=Colombo:

A. T. Morse & Co.	*70,000	
New York Commercial Co.	*55,000	
G. Amsinck & Co.	*7,000	
Poel & Arnold	*5,000	*137,000

Gutta-Jelutong.

September 11.—By the *Pathan*=Singapore:

L. Littlejohn & Co.	325,000	
Haebler & Co.	55,000	
George A. Alden & Co.	50,000	430,000

September 15.—By the *Lovate*=Singapore:

Haebler & Co.	250,000	
L. Littlejohn & Co.	265,000	
Wallace L. Gough Co.	150,000	
Poel & Arnold	55,000	720,000

Gutta-Percha.

September 20.—By the *President Grant*=Hamburg:

Robert Soltau & Co.		11,000

Balata.

August 28.—By the *Navarre*=Trinidad:

American Trading Co.	13,500	
Ed. Maurer	11,500	
Middleton & Co.	9,000	34,000

September 7.—By the *Saramaca*=Bolivar:

G. Amsinck & Co.	11,500	
Ed. Maurer	5,500	
Middleton & Co.	2,500	
Iglesias Lobo & Co.	2,500	
For Europe	22,500	44,500

September 11.—By the *Guiana*=Demerara:

Middleton & Co.	30,000	
Ed. Maurer	8,000	
American Trading Co.	5,000	
George A. Alden & Co.	2,500	45,500

September 15.—By the *Grenada*=Demerara:

American Trading Co.	22,500	
Ed. Maurer	11,000	33,500

September 20.—By the *Coppename*=Demerara:

Middleton & Co.	11,500	
Ed. Maurer	11,000	
G. Amsinck & Co.	9,000	
General Export Comm. Co.	2,000	33,500

CUSTOM HOUSE STATISTICS.

Port of New York.—August.

	Pounds.	Value.
Imports:		
India-rubber	6,409,227	$5,344,973
Balata	231,120	156,677
Guayule	600,227	238,324
Gutta-percha	67,114	7,925
Gutta-Jelutong (Pontianak)	3,409,556	164,266
Total	10,717,244	$5,912,165
Exports:		
India-rubber	111,383	$90,001
Balata	.....	.....
Guayule	2,247	890
Gutta-percha	.....	.....
Reclaimed rubber	72,760	12,132
Rubber scrap, imported	1,759,345	$114,453
Rubber scrap, exported	211,113	25,805

BOSTON ARRIVALS.

Pounds.

August 17.—By the *Indra*=Singapore:

State Rubber Co. (Jelutong)	550,000	
L. Littlejorn & Co. (Jelutong)	350,000	
Wallace L. Gough Co. (Jelutong)	150,000	
State Rubber Co. (Ceylon)	11,000	1,061,000

PARA IMPORTS OF INDIA-RUBBER, JULY, 1911 (IN KILOGRAMS).

	NEW YORK.					EUROPE.					
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.	Fine.	Medium.	Coarse.	Caucho.	Total.	TOTAL.
Gruner & Co.	120,161	21,582	176,804	54,227	372,774	209,966	25,105	14,020	149,893	398,984	771,758
Ad. H. Alden, Limited	18,187	8,179	45,460	37,290	109,116	76,840	18,530	18,935	52,500	166,805	275,921
Gordon & Co.	19,589	3,662	36,287	224	59,762	39,876	5,873	11,244	12,449	69,442	129,204
De Lagotellerie & Co.	21,590	5,610	32,340	.....	59,540	27,200	.....	7,590	18,150	52,940	112,480
Suarez Hermanos & Co., Ltd.	.....	.....	.....	.....	.....	20,233	2,973	1,600	1,742	26,548	26,548
Pires Teixeira & Co.	6,120	.....	990	.....	7,110	10,370	.....	5,280	.....	15,650	22,760
J. Marques	13,150	2,234	2,604	238	18,226	.....	.....	.....	.....	.....	18,226
R. O. Ahlers & Co.	.....	.....	.....	.....	.....	1,538	.....	539	3,647	5,724	5,724
Nunes Sobrinho & Co.	.....	.....	5,280	.....	5,280	.....	.....	.....	.....	.....	5,280
Sundries	.....	.....	.....	.....	.....	31,450	3,380	3,462	.....	38,292	38,,292
Manáos, direct	95,415	21,598	47,365	122,288	286,666	150,578	34,987	38,862	52,701	277,128	563,794
Iquitos, direct	.....	.....	.....	.....	.....	31,792	5,279	2,451	44,235	83,757	83,757
Total, July, 1911	294,212	62,865	347,130	214,267	918,474	599,843	96,127	103,983	335,317	1,135,270	2,053,744

INDIA RUBBER WORLD

Vol. 45. OCTOBER 1, 1911. No. 1.

TABLE OF CONTENTS.

Editorial:

	Page.
Brazilian Plans	1
What Higher Rubber Means	1
Malaya Five Years from Now	1
The Washing of Wild Rubber	2
"Castilloa" Coming Into Its Own	3
Secrets in Rubber Manufacture	3
Retailers Want Lower Shoe Prices	3
The Self-Deceived Suggestor	4
A Decade of American Rubber Exports	4
Golf Balls $6,000,000	5
Minor Editorial	5
The Brazilian Rubber Congress	7
The India-Rubber Trade in Great Britain — *Our Regular Correspondent*	9
[The New York Produce Exchange. Leyland. The Strike Fever. Strengthening Rubber Sheet. Rubber from Natal. Brazilian Plans. London Venture Corporation, Ltd.]	
Some Rubber Interests in Europe	11
The Rubber Opportunity in Brazil — *By the Editor*	12
Some Notes on Rubber Planting	14
The Obituary Record	22
[With Portrait of James H. Stearns.]	
Rubber Testing at Gross-Lichterfelde	23
The German Rubber Industry	25
[With 3 Illustrations.]	
Recent Patents Relating to Rubber	27
[United States. Great Britain. France. Germany.]	
The Editor's Book Table	29
Crude Rubber Imported Into Japan in 1910	30
New Rubber Goods in the Market	36
[One Piece Motor Truck Tire. Motorcycle Lamp Covers and Wind Shield. Lamp Covers That Fit. Something New in Wind Shields. The Goodrich Tennis Ball. Lin-Rhuber Flooring. A New Sportsman's Jacket. Tank for Testing Leaky Tubes. Indicator to Show Gasoline Consumption. New Styles in Mackintoshes Men. A Self-Filling Fountain Pen. The Presto Collar. Waterproof Skirts. Ruboilin for Covers and Aprons.]	
[With 16 Illustrations.]	

Miscellaneous:

A Great Loss in Selling Force	6
Man and Rubber	10
"The First Domestic Rubber"	13
Castilloa Culture in Java — *Illustrated*	16
Rubber and Balata Notes from British Guiana — *Our Special Correspondent*	17
Rubber in the Republic of Honduras — *Illustrated*	19
The Future of Guayule — *Illustrated*	20
Exports of Rubber Goods Tripled in Ten Years	22
Spreading with an Atomizer — *Illustrated*	24
How the Japanese Incorporate	31
New Tennis Shoe Lists — *Illustrated*	32
India-Rubber Goods in Commerce	32
Shipments to Non-Contiguous Countries	32
New Trade Publications	33
Over Ten Million Pairs of Rubber Heels a Year — *Illustrated*	33
Motorcycle Tires — *Illustrated*	34
A Pneumatic Suspension Wheel — *Illustrated*	35
Scrap Rubber and the 10 Per Cent. Duty	35
News of the American Rubber Trade — *Illustrated*	43
The Trade in San Francisco — *Our Correspondent*	43
The Trade at Akron — *Illustrated* — *Our Correspondent*	40
Review of the Crude Rubber Market	46

Antwerp.

RUBBER STATISTICS FOR AUGUST.

Details.	1911.	1910.	1909.	1908.	1907.
Stocks, July 31.....*kilos*	465,734	519,965	524,512	695,551	931,356
Arrivals in August.....	396,141	423,246	229,260	640,712	309,667
Congo sorts	299,703	338,797	147,313	522,847	232,522
Other sorts	96,438	84,449	81,947	117,865	77,145
Aggregating	861,875	943,211	753,772	1,336,263	1,241,023
Sales in August	339,474	406,651	508,921	461,749	500,509
Stocks, August 31.....	522,401	536,560	244,851	874,514	740,514
Arrivals since January 1..	2,880,214	2,758,353	3,162,684	3,473,730	3,501,465
Congo sorts	2,140,816	2,139,120	2,325,028	2,953,211	2,986,244
Other sorts	739,398	619,233	837,656	520,528	515,221
Sales since January 1....	2,946,025	2,763,303	3,513,568	3,606,119	3,419,135

RUBBER ARRIVALS FROM THE CONGO.

AUGUST 23.—By the steamer *Leopoldville*:

Bunge & Co.	(Société Générale Africaine) *kilos*	48,500	
do	(Chemins de fer Grands Lacs)	5,300	
do	(Société Abir)	700	
do	(Comité Special Katanga)	295	
Société Coloniale Anversoise	(Belge du Haut Congo)	6,300	
do	(Cie. du Kasai)	87,000	
do	(Cie. franc du Haut Congo)	6,600	
do	(Cie. du Lomami)	875	
L. & W. Van de Velde		4,000	
Charles Dethier	(American Congo Co.)	2,000	
do		1,900	
Cassart & Henrion		650	
Comptoir d'Irebu		200	164,320

SEPTEMBER 14.—By the steamer *Bruxellesville*:

Bunge & Co.	(Société Générale Africaine) *kilos*	89,800	
Do	(Intertrop. Anglo Belg. Trading Co.)	1,000	
Do	(Chemins de fer Grands Lacs)	350	
Do	(Alberta)	150	
Do	(Comptoir Commercial Congolais)	16,000	
Do	(Comité Special Katanga)	1,000	
Do	(Société Abir)	450	
Société Coloniale Anversoise	(Belge du Haut Congo)	250	
Do	(Cie. franc du Haut Congo)	3,700	
Do	(Sud. Cameroon)	17,100	
L. & W. Van de Velde,	(Société Comm. and Financ. Africaine)	10,000	
Do	(Cie. du Kasai)	101,000	
Congo Trading Co.		3,500	
Willaert Freres		1,200	245,500

28 FACTORIES FOR SALE

or lease. All the plants here mentioned are in good condition and ready for use. *Each* having some special advantage for some particular line of business and *all* well located as regards shipping facilities, labor conditions, water, fuel, steam, electric or water power, good homes for workmen, etc., and can be had at lower prices, with terms to suit, and illustrated circulars with full particulars will be sent to parties interested.

Richmond, Ind., 60,000 sq. ft.; Altoona, Pa., 23,000; Rome, N. Y., 75,000; Rockville, Conn., (near Hartford), 50,000; Patterson, N. Y., (Putnam County), 20,000; Hoboken, N. J., 40,000; Hoboken, N. J., 27,000; Brooklyn, N. Y., 37,000; Vineland, N. J., 10,000; Newark, (Soho Park), N. J., 55,000; Thomaston, Conn., (near Waterbury), 14,000; Meriden, Conn., 130,000; Shelton, Conn., (near New Haven), 60,000; Great Barrington, Mass., 35,000; Mamaroneck, N. Y., 25000; Bridgeport, Conn., 20,000; Jersey City, N. J., 50,000; Newark, N. J., (water front), 100,000; New York, (Bronx), 70,000; New York, (Bronx), 30,000; Schaghticoke, N. Y., (near Albany), 100,000; South Egremont, Mass., (Berkshire Co.), 20,000; Lockport, N. Y., 70,000; Philadelphia, Pa., 85,000; Baltimore, Md., 40,000; Dayton, Ohio, 100,000; Pennington, N. J., 30,000; Evansville, Ind., 100,000; Oil City, Pa., 25,000 sq. ft.

NICHOLSON & CO.

Real Estate and Factory Brokers

150 BROADWAY **NEW YORK**